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TRANS-MISSOURI STOCK RAISING:
THE
PASTURE LANDS
OF
NORTH AMERICA:
WINTER GRAZING:

THE SOURCES OF THE FUTURE BEEF AND WOOL
SUPPLY OF THE UNITED STATES;

A DESCRIPTION OF THE VAST REGION LYING BETWEEN THE ARKANSAS ON THE SOUTH, THE
BRITISH POSSESSIONS ON THE NORTH, THE ONE HUNDREDTH MERIDIAN ON THE
EAST, AND THE SUMMIT OF THE ROCKY MOUNTAINS ON THE WEST, WHERE
THE GRASSES ARE SELF-CURING, AND WHERE SHEEP AND
CATTLE LIVE AND THRIVE THE YEAR ROUND
WITHOUT OTHER FOOD OR SHELTER
THAN THAT AFFORDED
BY NATURE:

By DR. H. LATHAM.
LATE SURGEON OF THE U. S. A.

[WRITTEN ORIGINALLY AS LETTERS TO THE OMAHA DAILY HERALD.]

OMAHA, NEBRASKA:
DAILY HERALD STEAM PRINTING HOUSE.
1871.



Trans-Missouri Stock Raising.

WINTER GRAZING IN THE TRANS-MISSOURI REGION—THE FUTURE SOURCES OF THE BEEF AND WOOL SUPPLY OF THE UNITED STATES—PHYSICAL GEOGRAPHY OF OUR GREAT PASTURE LANDS—LETTERS OF EDWARD CREIGHTON, ALEXANDER MAJOBS, SETH WARD, ALEXANDER STREET, AND OTHERS—GREAT FACTS AND PROPOSITIONS DISCUSSED FROM A STATISTICAL AND HISTORICAL STAND-POINT.

BEFORE proceeding to speak of the grazing resources of the trans-Missouri country, I wish, by way of preface, to briefly state the following facts and propositions:

FACTS.

Fact First. That in February, 1869, the aggregate value of all the live stock in the United States was nearly one and one-half billions of dollars.

Fact Second. Enormously large as the above may appear, it is also true that the increase for the last two years has not been anywhere in proportion to the increase of population. The annual increase of live stock has been one and three-fourths per cent, while our population increases annually at the rate of three and one-third per cent.

Fact Third. The increase above applies to the whole ten years; but during the last two years there has been an actual decrease of live stock in the whole country, as is evidenced by the following

TRANS-MISSOURI STOCK RAISING.

statement of total values of live stock in the United States for 1867 and 1868:

Total value for 1867..... \$ 1,396,643,699
Total value for 1868..... 1,337,111,822

The decrease in value for one year was therefore \$59,531,877, and that, notwithstanding an advance in value per head of all kinds of stock, except sheep.

The census of 1840, 1850 and 1860 shows the following relation of the number of cattle in the various States to the population; that is, they have the numbers of cattle set opposite to the States, to each one hundred people, and it shows the great decrease in most of the States:

STATES AND TERRITORIES.	1840	1850	1860
Alabama	113	94	81
Arkansas	194	139	126
California	263	263	3-7
Connecticut	77	87	48
Delaware	60	66	61
Florida	217	220	274
Georgia	127	121	96
Illinois	140	167	87
Indiana	90	73	67
Iowa	88	71	79
Kansas			61
Kentucky	101	77	72
Louisiana	189	111	73
Maine	65	59	59
Maryland	55	36	37
Massachusetts	38	26	22
Michigan	37	69	71
Minnesota		33	64
Mississippi	194	121	91
Missouri	113	116	98
New Hampshire	97	84	81
New Jersey	50	43	34
New York	79	60	59
North Carolina	82	80	69
Ohio	80	69	70
Oregon		314	292
Pennsylvania	68	50	46
Rhode Island	35	34	23
South Carolina	96	116	72
Tennessee	100	73	68
Texas		428	570
Vermont	125	112	115
Virginia	83	76	66
Wisconsin	96	60	66
District of Columbia	07	06	01
Dakota			30
Nebraska			100
New Mexico		53	106
Utah		111	109
Washington Territory			229

Only four States and Territories have increased their stock faster than their population, while thirty-five States and Territories have either stood still or materially decreased in stock in comparison to their population.

Fact Fourth. From the constantly increasing disproportion between live stock and population, the supply of animal food is unequal to the demand, and the consequence is a rapid and steady

increase in its price, as the following Chicago market reports will show :

Receipts of cattle in Chicago, 1867 and 1868: 1867, 334,188; 1868, 324,529. Actual decrease in one year, 9,659.

Yet the population of Chicago had increased 100,000 in that time.

Chicago prices for cattle and hogs for six years :

	BEEF CATTLE IN CURRENCY	LIVE HOGS IN CURRENCY.
1863.....	\$ 4 80	\$ 5 00
1864.....	7 52	9 80
1865.....	8 46	11 05
1866.....	7 72	9 67
1867.....	8 02	7 01
1868.....	8 10	9 40

Fact Fifth. The total number of sheep in all the States in

February, 1867.....	38,991,912
February, 1868.....	37,724,279

Decrease in twelve months..... 1,267,633

If the increase of our population was the usual three and one-third per cent., then we had more than one and a quarter millions of people more to clothe at the end of the year, and we had one and a quarter millions less fleeces of wool to do it with.

Fact Sixth. The United States, with an area of 2,940,000 square miles, produces 100,000,000 pounds of wool. The British Islands, with an area of only 118,000 square miles, produce 260,000,000 pounds. With twenty-five times their land, and five hundred times their pasturage, we produce less than one-half as much wool.

PROPOSITIONS.

Proposition First. That if we are to maintain a large population of laborers, and sell the product of their labors in the great markets of the world in competition with foreign populations, we must furnish them with cheap food and clothing, and the cheaper the food and clothing of the laborer, the cheaper will be every article which labor produces; and therefore, in proportion to the abundance and cheapness of our food and clothing, will be our success as a manufacturing nation.

Proposition Second. That there never was and never will be a great and dominant race of people without an abundant supply of animal food—vegetable food alone degenerating people to the condition of the Macaroni Eaters of Italy.

Proposition Third. That the increase of live stock in any country must be equal to the increase of its population [if it expects to

clothe and feed that population, or in other words, to preserve the balance of trade.

If it is expected to export annual productions instead of importing them, the live stock increase should be greater than the increase of population.

Proposition Fourth. That the reason that live stock is decreasing rather than increasing is owing to the fact that grazing lands of the East are too high priced, and it costs too much to provide hay and grain to feed through long winters. Especially is this true of wool growing, as wool of all raw materials, except silk, bears long transportation best, and therefore the people who graze sheep in South America, South Africa and Australia, can raise wool where there is no winter feeding or care, and pay for thousands of miles of transportation, and still drive our farmers out of market.

Proposition Fifth. That we have an area of country, between the Missouri river and the Pacific coast, containing 1,650,000 square miles, or more than a billion acres, which is one immense pasture ground, as Hepworth Dixon says of it, boundless, endless, gateless, and all of it furnishing winter grazing.

I shall not insult the intelligence of your readers by demonstrating the above propositions except the last one. That I propose to do in such a manner as to leave no room for doubt or cavil.

Buenos Ayres has a climate similar to that of our plains, and on her great Pampas 75,000,000 sheep, and countless herds of horses and cattle graze the year round. They are never fed or sheltered in any season of the year. In South Africa it is the same, and so in Australia. In Asia the great Steppes are like the plains of the interior of our own country and those three countries. It is there that grazing is first spoken of in the History of Man. "And Abel was a keeper of sheep;" "Jabal was the father of such as dwell in tents, and of such as have cattle;" "And Abram was very rich in cattle;" "And Lot, who went with Abraham, had flocks and herds." The wealth of all the interior of that country was a pastoral wealth, and such it remains to this day.

The secret of these great herds of cattle, horses and sheep for so many centuries is *winter grazing*. I speak of the grazing in all these countries to show that the idea of cattle grazing in winter in the lati-

tude and altitude of these plains is not new, but as old as the History of man.

PHYSICAL GEOGRAPHY OF OUR GREAT PASTURE LANDS.

The great belt of country between the Missouri river and the Pacific ocean is bisected about equally north and south by the great Snowy Range. As you leave the Pacific ocean or Missouri river and approach these lofty mountains, you gradually rise until you are on the elevated table lands of the continent.

Through these immense grassy tables the great streams run which drain this mountain range of its snows and running waters. As you approach nearer to the mountain base you reach greater elevations, and find the country better watered.

Intersecting this country, extending from the Missouri and Mississippi rivers to the foot of the mountains, one thousand and one hundred miles north and south, and five hundred miles east and west, is the great Rio Grande, Necees, San Antonio, Gaudaloupe, Colorado, Brazos, Trinity, Main Red, Washita, Canadian, Cimarron, Arkansas, Smoky Hill, Saline, Solomon's Fork, Republican, North and South Platte, Loup Fork, Niobrara, White Earth, Big Cheyenne, Little Missouri, Powder, Tongue, Rose Bud, Big Horn, Wind River, Yellow Stone, Milk River, Muscle Shell, Marais, Jefferson Fork, and the head of the Missouri itself above the Yellow Stone, each one in itself fitted to take rank with the great rivers of the world, and all aggregating fully twenty thousand miles of living crystal waters. Each one of these is made up of innumerable smaller streams, some of which would be called great, but for the comparison with the still larger parent stream, all making a complete net work of mountain streams, draining every mountain and hillside, and watering every valley.

The western slope is equally well if not better watered. I do not think there is another country so well watered as the two Rocky Mountain slopes. From El Paso del Norte, on the Mexican boundary, to the head waters of the Missouri river, a distance, if measured by the windings of the great mountain range, of from eighteen hundred to two thousand miles, there is not five miles between the small mountain streams that run down the great slopes to form these larger ones. The valleys of these little, and even of the large streams, are covered with a dense growth of tall grass; while the higher grounds

between these streams are covered with a shorter but sweeter growth. The bluffs bordering on the large streams on the plains are not high nor precipitous, but rounded and regular, and grass-grown. Nearer the mountains these bluffs are higher and steeper, and in some instances amount to canons, and afford the best protection to all kinds of stock.

The country west of the foot of the Sierra Madre or Snowy Range, is divided into the great mountain valleys, such as the great parks of Colorado and the Laramie plains, all of which, to the height of nine thousand feet, are covered with luxuriant grass. These valleys are elevated table lands like the Steppes of Asia, with soil, climate and productions similar. I have devoted this much time to the physical geography of this trans-Missouri country, that your readers may know of its general formation, of its streams, etc.

CLIMATE.

There is, perhaps, no one subject so little understood as that of the climate of this country. It is entirely unlike the Atlantic and Mississippi Valley States. Judged by the climate of the States in the same latitude, and at the same altitude, four-fifths of this larger division of our country would be uninhabitable from snows and frosts.

On the Atlantic coast, on the White and Allegheny Mountains, the perpetual snow line is, or would be, seven thousand feet above the sea. In the same latitude on the Rocky Mountains the snow line is from twelve to fourteen thousand feet above.

The terminal line of vegetation on the white Mountains is five thousand feet; on the Allegheny mountains it is five thousand and five hundred feet; hereon the Black Hills at Sherman, eight thousand and two hundred, and the still higher points, as high as nine thousand feet, are covered with luxuriant growths of grass.

Strawberries are picked on the Snowy Range to the height of eleven thousand feet, and evergreen trees grow to the tops of the highest mountains, which are over fifteen thousand feet high. The great table lands and the elevated plains and valleys of the mountains, such as North, Middle and South parks, and the Laramie plains, are one and two thousand feet above the tops of the Atlantic coast range mountains, and in the same latitude, are as mild as the Atlantic seashore.

There must be some powerful influence to make such wonderful differences on the same continent.

England, in latitude 52° , has a warmer climate than Long Island in 40° . Nova Scotia 45° , is nearly frigid in temperature, while France, in 49° north latitude, 4° farther north, is vine clad. While the inhabitant of Nova Scotia shivers over his fire, the Frenchman reclines in the shade of his "vine and fig tree."

The climate of Europe is tempered by the eternal waters of the great gulf stream, which has been heated in the tropics. Not only is the climate on the immediate coast directly influenced and changed by the gulf stream, but the winds warmed by it give the vine, the ivy and the geranium to the Seine, the Rhine and the Elbe, and even invade the realms of the Winter King on the sides of the lofty Alps, the Ural, the Appenines and the Pyrenees.

Thus it is here. The western coast of our continent is washed by a tropical stream greater and warmer than the gulf stream, and which makes San Francisco, in the same latitude as Richmond, 14° warmer; makes Astoria, in the same latitude as Fort Brady, Michigan, 28° warmer in winter, and 12° warmer the year round; makes Sitka, Alaska, in the same latitude as Nain, Labrador, 32° warmer in winter and 17° the whole year.

The currents of air heated by the thermal waters, are forced east, and spreading through the valleys of the great mountain range, give to Utah (four thousand and five hundred feet above the sea) grapes, peaches, apricots, cotton, the sugar cane, and other tropical productions. To Colorado, along the eastern base of the mountains, at an altitude of five thousand feet, it gives the climate of Virginia and Tennessee.

This heated wind, the warm, balmy breath of the tropics, makes the snow and ice shrink and retire up the sides of the lofty Sierra Madre; giving up the land to the wild rose, the mountain lily, the honey suckle, the columbine and the trailing arbutus, and hundreds more of all the flowers, all spreading out into a floral carpet of the richest and most varied colors.

Mild temperatures in our high altitudes and latitudes are not of their kind wonderful in comparison with Asia, whose table lands in the great Himalayas are many degrees north of ours; and higher than the tops of Long's, Pike's and Fremont's Peaks, and Mt. Hood.

The Plains of Sadak, belonging to the Rajah of Cashmere, in latitude 40° , are fifteen thousand feet high. Their snow and rain fall is less than ours. Herds of cattle, sheep and horses graze upon them the year round, while still higher on the hill sides which surround them, the Tartars grow barley and oats each year.

MEAN TEMPERATURE OF POINTS ON THE PLAINS AND IN
THE MOUNTAINS.

Fort Kearney, Nebraska, has a mean temperature of 50° ; so has the whole North Platte region to the foot of the Black Hills.

All the Missouri river, from Omaha to one hundred miles north of Fort Benton, has a mean temperature for the year of 45° Fahrenheit. All the country intervening between the North Platte on the south—the line of 50° temperature—and the Missouri river on the north has a temperature between 45° and 50° . There is no part of the country north of the Union Pacific railroad and the British line, north and south, and between the Missouri river on the east, and the Rocky Mountains on the west, that has a lower annual temperature than 45° . South of the Union Pacific railroad, to the Rio Grande, the mean annual temperature varies from 50° to 65° . No single point has been found south of the Union Pacific railroad east of the mountains and west of the Mississippi, where the temperature is below 50° . Nor is there a point where it is higher than 65° .

West of the mountains the temperature is considerably higher in the same latitudes. The authority for these temperatures is Surgeon General Lawson's meteorological report, and is from notes taken by surgeons of the United States army for a series of years, at different posts in this country.

Father DeSmet gives the following account of the climate, &c., of a country one thousand miles north of us:

The entire region in the vicinity of the eastern chain of the Rocky Mountains, serving as their base for thirty or sixty miles, is extremely fertile, abounding in forests, plains, prairies, lakes, streams and mineral springs. The rivers and streams are innumerable, and on every side offer situations favorable for the construction of mills. The northern and southern branches of the Saskatchewan water the district I have traversed, for a distance of three hundred miles.

Forests of pines, cypress, thorn, poplar and aspen trees, as well as others of different kinds, occupy a large portion of it, covering the

declivities of the mountains and banks of the rivers. These originally take their rise in the highest chains, whence they issue in every direction like so many veins. The beds and sides of these rivers are pebbly, and their course rapid; but as they recede from the mountains they widen, and their currents lose something of their impetuosity. Their waters are usually very clear. The country would be capable of supporting a large population, and the soil is favorable for the production of wheat, barley, potatoes and beans, which grow here as well as in the more southern countries.

In Ross Browne's Mineral Resources is the following of the same country:

Sir Roderick Murchison, in an address before the London Geographical Society, represents this chain of mountains to be greatly depressed in high, northern latitudes, and indeed several of the tributaries of the McKenzie have their sources on the Pacific slope, and wind through the mountains before falling into the great Arctic river. The mountain valleys of the Peace and Liard rivers, latitude 56° to 60° , are thus influenced by the Pacific winds, and wheat and other cereals are successfully cultivated.

Sir Alexander McKenzie describes, under date of May 10th, the exuberant verdure of the mountain ranges.

During an inquiry in 1858 by the English House of Commons into the situation of the territory of the Hudson's Bay Company similar statements were elicited. Dr. Richard King, who accompanied an expedition in search of Sir John Ross, as "surgeon and naturalist," was asked what portion of the country visited by him was valuable for the purpose of settlement. In reply he described as "a very fertile valley, a square piece of country," bounded on the south by the Cumberland House, and by the Athabaska lake on the north. His own words are as follows:

The sources of the Athabaska and the sources of the Saskatchewan include an enormous area of country. It is, in fact, a flat piece of land surrounded by water. When I heard Dr. Livingstone's description of that country which he found in the interior of Africa, within the equator, it appeared to be precisely the kind of country which I am now describing. It is a rich soil, interspersed with well wooded country, there being growth of every kind, and the whole vegetable kingdom alive."

When asked concerning mineral productions, his reply was, "I do not know of any other mineral except limestone; limestone is apparent in all directions. * * The birch, the beech, the maple, and there is every kind of fruit."

When questioned further as to the growth of trees, Dr. King replied by a comparison "with the magnificent trees around Kensington Park, in London." He described a farm near the Cumberland House, under very successful cultivation—"luxuriant wheat, potatoes, barley, pigs, cows and horses." So much for the climate a thousand miles north of us.

RAIN FALL.

From the same authority (Surgeon General Lawson) the rain fall for the whole year east of the summit of the Snowy Range, is as follows:

All the country west of Omaha, on the line of the Union Pacific railroad as far as Fort Kearney, is in this belt, where twenty-five inches of rain fall yearly.

West of Fort Kearney, extending to the Sierra Madre, on this railroad line, including the Black Hills and Laramie Plains, is the belt where twenty inches fall annually, with the exception of a small portion of country in Texas called the Staked Plain. These two belts include all the Trans-Missouri country west from the Missouri and Mississippi to the Snowy Range. This rain fall includes the snow reduced to water measure, twelve inches of snow making one inch of water. This water falls mostly in the spring in gentle rains, during the month of May, which is the rainy season of the country.

This month of May's rain gives our grasses their growth, and by the 1st to the 15th of June they are fully matured. Our rains then come in short showers, and the fall for the summer is small. Our grasses begin to cure, and by the 1st of September *they have become perfectly cured, uncut hay*. This one fact alone is the key to the great superiority of this country for grazing.

Our grasses cure instead of decomposing, as there is neither the heat nor the moisture, both of which are necessary for the chemical process of decomposition.

SNOW FALL.

As you leave the Missouri river you enter the belt of country

where two feet of snow falls. This belt extends like the first belt of rain to Fort Kearney. West of that point to the mountain's foot is the belt of eighteen inches. These two belts include all the country east of the mountains. The snow falls at a single storm are very light, three inches being exceptionally large, and this amount being dry and light, never lies on a level; in twenty-four hours from the time of fall the ground is bare.

The following letter from Dr. Alden, post surgeon at Fort D. A. Russel, Wyoming, six thousand and ninety-three feet above the sea level, will show the facts concerning the snow storms:

FORT D. A. RUSSELL, W. T., January 17, 1870.

DR. H. LATHAM:

Surgeon U. P. R. R., Laramie, W. T.

Dear Sir—In answer to your inquiries relative to the snow fall at this post, I cheerfully give you such information as the record of meteorological observations will supply. It covers a period of from March, 1868, to the present time.

During the months of March, April, September, November and December, 1868, the amount of snow fall was 4.37 inches, the greatest amount being in March, 1.6 inches.

The records of the year 1869 are more complete. There fell 13.56 inches of snow during the months January, February, March, April, October, November and December. The greatest amount was in March, 3.97 inches; the least in December, .13 of an inch.

The snow in this vicinity rapidly disappears after falling, and it is very rare that there is a sufficient quantity, or that it remains long enough to give sleighing. During the winter season proper, though the thermometer sometimes sinks to 10° or 15° below zero, the weather is usually clear and open, and the roads good.

March is the most inclement month.

Very respectfully yours,

C. H. ALDEN, Surgeon U. S. A.

There is one peculiarity of our winters very favorable to unsheltered stock, there is no rain during the cold months. The storms are all snows, and exceedingly dry, so much so that it does not freeze to stock. Stock raisers in the Western States will fully appreciate the importance of this fact. Many storms in the Mississippi valley commence with rain and finish with snow, freezing to the poor animals.

SOIL.

Our soils are the washes and wear of the great mountain range. The alkaline earths are largely represented; those qualities which eastern farmers try to replace by plaster of Paris, lime, ashes, bone

dust, &c., exist in lasting quantities. From this fact comes the nutritious character of the plains' grasses.

GRASSES.

There are not only the "bunch" and "gramma" grasses, but a thousand other species. Each valley has its complement of species. I have written this much of the necessity of wool, mutton and beef production, and of the theory of our winter grazing.

With the facts of our climate, I now come to the actual proof, which there is no gainsaying. As the writers of the following letters are well known by all our people, and to those of your readers who do not know them personally or by reputation, I refer them to the endorsement of their statements by Governor Campbell, and Judges Kingman and Jones:

CHEYENNE, April 5th, 1870.

DEAR SIR:

In reply to your inquiries in relation to the grazing capacity of the country north of the Union Pacific railroad and east of the snowy mountain range, I have to say that during the summer of 1865 I traveled northwest of Omaha, following up the Loup Fork of the Platte, leaving which we crossed the Niobrara, north and south forks of the Big Cheyenne river; thence following along the base of the eastern Black Hills; thence still northwest across the Little Missouri, and then down the Powder river to the Yellowstone. Our route returning was along the base of the Big Horn mountains and the Black Hills and down the Platte. The grazing, the whole distance of this journey, which was not less than sixteen hundred miles, was exceedingly good.

There is considerable land which does not grow grass; such as some places in the Mauvais Terre. Yet there is grass in all the country we passed over for countless herds of cattle, sheep and horses. Buffalo, elk, antelope and deer in immense numbers graze here both summer and winter. Old mountaineers, hunters and trappers all told me that the winter grazing was fine, and uninterrupted by snow. I have been familiar with the winter grazing in that country for six winters, and I am sure that stock will winter on the native grass without shelter, as well as they do in Illinois with shelter and with hay and grain.

GEO. W. COREY, M. D.

Late Surgeon Twelfth Missouri Cavalry, Acting
Medical Director, District of Nebraska.

CHEYENNE, W. T., August 21, 1869.

DR. H. LATHAM:

Dear Sir.—In reply to yours concerning grazing on the plains and in the mountains, I have to say that I have been engaged in the stock business in Colorado and Wyoming for the past eight

years. During all that time I have grazed stock in nearly all the valleys of these territories, both summer and winter. The cost of both summering and wintering is simply the cost of herding, as no feed nor shelter is required. I consider the summer cured grass of these plains and valleys as superior to any hay. My cattle have not only kept in good order on this grass through all the eight winters, but many of them, thin in the fall, have become fine beef by spring. During this time I have owned twenty thousand head of cattle. The per cent. of loss in wintering here is much less than in the States, where cattle are stabled and fed on corn and hay. The cost of raising cattle here can be shown from the fact that I would be glad to contract to furnish any quantity of beef, from heavy, fat cattle in Chicago at seven cents, net weight.

My experience in sheep has not been so extensive as in cattle. I think, however, that the short, sweet grass, and the dry climate here is especially adapted to raising sheep. I am confident, from my experience, that this trans-Missouri country can defy all competition in the production of wool, mutton, beef and horses.

Truly Yours,

J. W. ILIFF.

SODA SPRINGS, UTAH, May 1st, 1869.

DR. H. LATHAM :

Dear Sir—In answer to your inquiries, I have to say that I have been grazing cattle on the plains and in the mountains for twenty years. I have, during that time never had less than five hundred head of work cattle, and for two winters, those of 1857 and 1858, I wintered fifteen thousand head of heavy work oxen on the plains each winter. My experience extends from El Paso, on the Rio Grande, to one hundred miles north of Fort Benton, Montana.

Our stock is worked hard during the summer, and come to the winter herding ground thin. Then it is grazed without shelter, hay and grain being unknown.

By spring the cattle are all in good working order, and many of them fat enough for beef. I have often sold as high as thirty-three and one-half per cent. of a drove of work oxen for beef that were thin the fall before, and that had fattened on the winter grass.

During these twenty years the firm with which I was connected wintered many cattle in Missouri and Arkansas on hay and corn, and I am sure the per cent. of loss of those wintered in this country in all the valleys of the trans-Missouri country is less than it was in those States with food and shelter. From my twenty years' experience I say without hesitation that all the country west of the Missouri river is one vast pasture, affording unequaled summer and winter pasturage, where sheep, cattle and horses can be raised with only the cost of herding.

Truly Yours,

ALEX. MAJORS,

Late of the freighting firm of Majors, Russell & Waddell.

CHEYENNE, April 6, 1870.

DR. LATHAM:

In reply to your inquiries as to my experience in grazing on the plains and in the mountains, I have to say that I am familiar with grazing for eleven years. I have grazed stock each and every summer and winter during that time. I have had experience with horses, sheep and cattle. I have found no difficulty in wintering stock without shelter, other than is afforded by the bluffs and in the canons.

My loss in winter has been less than during my experience in stock-raising in Ohio. I have now eight thousand sheep, which have been wintered well on the native grasses.

Since bringing them to this cool and elevated country they have increased in quantity as well as the quality of the wool. I know of no disease which prevails among sheep in this country. Out of eight thousand head I have lost only two this winter by wolves. I think this country peculiarly the home of sheep. I can raise wool here for less than one-half what it can be raised in Ohio or other eastern States.

J. A. MOORE.

An extract from Gen. Reynold's explorations of the Yellowstone. Pages 74 and 75.

"Through the whole of the season's march the subsistence of our animals had been obtained by grazing after we had reached camp in the afternoon, and for an hour or two between the dawn of day and our time of starting. The consequence was that when we reached our winter quarters there were but few animals in the train that were in a condition to have continued the march without a generous diet. Poorer or more broken down creatures it would be difficult to find. They were at once driven up the valley of Deer creek and herded during the day, and brought to camp and kept in a corral through the night. In the spring all were in as fine condition for commencing another season's work as could be desired. A greater change in their appearance could not have been produced, even if they had been grain fed and stable-housed all winter. Only one was lost, the furious storm of December coming on before it had gained sufficient strength to endure it. This fact, that seventy exhausted animals, turned out to winter on the plains the first of November, came out in the spring in the best condition, and with the loss of but one of the number, is the most forcible commentary I can make upon the quality of the grass and the character of the winter."

HEADQUARTERS DEPARTMENT OF THE PLATTE, CHIEF }
QUARTERMASTER'S OFFICE, OMAHA, Neb., March 29. }

DR. LATHAM:

Dear Sir:—I have had some experience with stock on the plains and the mountains for the past four winters. Quartermaster's animals, horses and mules, have grazed more or less at the following posts

each of the winters of 1866, 1867, 1868, and 1869, viz: Forts Kearney, McPherson and Sidney Barracks, Nebraska; Forts Sedgwick and Morgan, Colorado; Forts Laramie, Fetterman, Reno, Phil. Kearney, Saunders, D. A. Russell, Fred. Steele and Bridger, Wyoming territory; Camp Douglas, in Utah, and Fort C. F. Smith, in Montana. These forts embrace a country five hundred miles north and south, and eight hundred east and west.

I am of the opinion that in consequence of the peculiar nutritious grasses and the lightness of snow falls in all this extent of country, herds of sheep, cattle and horses can be grazed the year round with perfect safety from danger in winter, and with great profit.

Very Respectfully,

WM. MYERS,

Brevet Brigadier-General and Chief Quartermaster.

FORT D. A. RUSSELL, W. T., April 6, 1870.

DR. LATHAM:

Surgeon U. P. R. R.,

Dear Sir—I respond very cheerfully to your request for information about the climate, soil, grasses, etc., of the country on the east slope of the mountains, from the Big Horn down to the Republican and Smoky Hill, which I prospected or scouted pretty thoroughly in 1867 and 1868. From the Smoky Hill, in about latitude 39 north to latitude 44, the country is very much like that immediately around the Union Pacific railroad, with which you and the traveling public are familiar. The character of all this country is rolling prairie, very well watered, and abounding in good grasses to such an extent that the assertion may be safely made that the supply of grazing is unlimited.

All of the streams in this range furnish some timber, and many of the tributaries of the Republican, Powder, Tongue, Big Horn and other rivers are covered with heavy forests of hard and soft wood. All of the bottom lands on the streams flowing from the mountains are what would be called east, good, reliable farming lands, fit to produce any of the regular crops, except, perhaps, corn. The only danger to the corn crop would be, I suppose, the shortness of the season, and the frequency of frosts consequent on the extreme altitude of this section.

North of latitude 44 the country changes materially for the better. It is better watered, having an abundance of pure, clear mountain streams. The soil is richer, the grasses are heavier and stronger, and the climate very much milder than that for several degrees south. I think the valleys of Tongue river, Little Horn, Big Horn and the Yellowstone, will produce corn, and good corn, too. About the other crops, barley, wheat, potatoes, etc., there is no question. This, I take it, shows about the maximum of soil and climate, for there is no question about the value of a country that embraces hundreds of millions of acres, that will produce good crops of cereals and grasses.

The valley of the Big Horn, five to twenty miles in width, by about one hundred miles in length, I regard as one of the choice spots of the

earth. Here the climate, soil, scenery and natural productions combine to make a country I have not seen excelled anywhere from Georgia to Montana, and equaled only by the favorite countries along the Ohio, the Cumberland or the Tennessee. The prevailing winds are westerly, bringing the mild airs of the Pacific to these inland slopes, and tempering the winters of latitude 45° and 46° to about the temperature of the mountain country of Kentucky and Tennessee.

The value of this country for grazing may be estimated from the fact that good fine grasses grow evenly all over the country, that the air is so fine that the grasses cure on the ground without losing any of their nutriment, and that the climate is so mild and genial that stock can range and feed all the winter and keep in excellent condition without artificial shelter or fodder. The fact of grasses curing on the ground is a well-known peculiarity of all the high country on the east slope of the mountains, and in this is found the great value of this immense range for grazing purposes.

The difference between grasses which have to be cut and cured and those which are preserved on the ground, is enough to convince the stock raiser and herder of the value of these immense ranges known as "The Plains." I believe that all the flocks and herds in the world could find ample pasturage on these unoccupied plains and the mountain slopes beyond, and the time is not far distant when the largest herds and flocks in the world will be found right here where the grass grows and ripens untouched from one year's end to the other. I believe there is no place in this section of the country, from latitude 47° down, where cattle and sheep will not winter safely with no feed but what they can pick up, and with only the rudest shelter. In the mountains, or in the valleys of the mountain streams, they would find ample shelter from storms, in the frequent canons and ravines.

The mountain ranges are peculiarly adapted to sheep raising, the range is unlimited, the grasses are fine, and the air is pure and dry—conditions which insure healthier stock and better wool than the climate and soil of the low country.

I have said that the climate about Big Horn was very mild; as an indication of this I will state that the average temperature in the valley, latitude $45^{\circ} 30'$, was in December, 1867, 32° above, in January, 1868, 20° above, in February 40° above, and in March 55° above. In August, 1867, the mercury was as high as 107° above. Coal, iron and fine building stone are plentiful in the mountains of the Big Horn ranges. Fine clay and limestone are found in abundance, and the mountains furnish good pine timber in fair quantity. Nature has provided most liberally for the wants of civilization in this favored region, and when it is opened up to settlement, it will attract a large population, and will prove to be a great producing country.

Very truly yours,

L. P. BRADLEY,
Brevet Brigadier-General, U. S. A.

OMAHA, Neb., April 15, 1870.

DEAR SIR :

I cheerfully give you for publication the result of my experience in grazing in the country west of the Missouri river.

My first grazing in that country was the winter of 1859. Since then, for eleven winters, I have grazed more or less stock, including horses, sheep and cattle in Colorado, Wyoming, Utah and Montana. The first seven winters I grazed work oxen mostly. Large work cattle winter on the grasses in the valleys and on the plains exceedingly well, and are in good condition for summer work by the first of May. The last four winters I have been raising stock and have had large herds of cows and calves. The present winter I have wintered about eight thousand head. They have done exceedingly well. We have lost very few through the whole winter, and those lost were very thin when winter commenced.

We have no shelter but the bluffs and hills, and no feed but the wild grasses of the country. We have had three thousand sheep the past winter, and they are in the best of order. Many are being sold daily for mutton. Like the cattle they require no feed nor shelter. The high, rolling character of the country, and the dry climate and the short, sweet grasses of the numerous hillsides, are extremely favorable to sheep raising and wool growing. I have been interested in stock raising in the States for a number of years, where we had tame grass pastures and tame grass hay and fenced fields and good shelter for the stock, and good American and blooded cattle, and an experienced stock raiser to attend to them, and after a full trial I have found that with the disadvantage of the vastly inferior Texas cattle, and no hay, nor grain, nor shelter, nothing but the wild grass, there is three times the profit in grazing on the plains; and I have, as a consequence, determined to transfer my interest in stock raising in the States to the plains.

There is no prospective limit to the pasturage west of the Missouri river.

All the wool, mutton, beef and horses that the commerce and population of our great country will require a hundred years hence, when the population is as dense as that of Europe, can be produced in this country, and at half the present prices.

Truly Yours,

EDWARD CREIGHTON,
President First National Bank of Omaha.

CHEYENNE, May 15, 1868.

DR. LATHAM :

Dear Sir.—From an experience of over twelve years in wintering stock on the plains, I am satisfied there is no country better adapted to the purpose than Wyoming and Colorado territories. I have wintered herds of my own and others in Wyoming, repeatedly, and the per centage of loss is less than wintering in the States on corn and hay. Here we feed nothing, but herd our stock on the dry grass. During the last winter I had charge of two thousand head of cattle

belonging to Wells, Fargo & Co. These cattle were worked very hard during the summer and fall in transporting government supplies to the Powder river country, and many of them were not turned out until the first of January, and were so poor that they could scarcely travel to the herd grounds, some forty miles. They had nothing all winter but grass; not a mouthful of hay nor grain, and yet we lost but about thirty head out of the two thousand. Many of them were fat enough for beef in March and April, and by the first of May nearly all were in good working condition. From long experience I am fully satisfied that the gramma, or bunch grass which abounds in this country, is far superior to any of the tame grasses of the States, drying up in the fall without any rain upon it, it retains all the nutritious properties all winter.

Truly Yours, ALEX. STREET,
Superintendent Wells, Fargo & Co.'s Freighting Department.

Extract from a letter from Mr. Seth E. Ward, whose experience covers nearly one-third of a century :

NEBRASKA CITY, Neb., August 30, 1869.

H. LATHAM, M. D. :

Surgeon U. P. R. R., Laramie, Wyoming :

Dear Sir—Yours of the 23d inst., desiring information in regard to the grazing capabilities of the great trans-Missouri country, is received, and in reply I have to state that from an experience of over thirty years I am convinced that no country in the same latitude, or even far south of it, is comparable to it as a grazing and stock raising country. Cattle and stock are generally healthy, and require no feeding the year round, the rich "bunch" and "gramma" grasses of the plains and mountains keeping them ordinarily fat enough for beef during the entire winter. * * * From my long experience and the success that I have had with stock in all that country, I have no hesitation in recommending it as an excellent grazing and stock raising country.

Very Respectfully Yours,

S. E. WARD.

WYOMING TERRITORY, EXECUTIVE DEPARTMENT, }
CHEYENNE, April 19, 1870. }

MY DEAR DOCTOR :—I return herewith the letters in reference to the grazing resources of the western territories. The writers of these letters are known to me as men of honor and intelligence. Their statements can be relied upon implicitly, for they know whereof they write.

The settlement and development of the trans-Missouri country is destined to increase the material wealth of the country fifty per cent. She can supply the world with horses, cattle and sheep, while our mineral resources are practically inexhaustible, and our fertile river valleys will afford sufficient food to supply the wants of the vast population which will at no distant day assist in developing our vast resources.

Very Truly Yours, J. A. CAMPBELL, Governor.

CHEYENNE, April 21, 1870.

We take pleasure in saying that we are personally acquainted with the writers of the above letters, and know them to be well informed on the subject of which they speak, and that they are deserving of full confidence in all respects.

J. W. KINGMAN,

Associate Justice United States Supreme Court, W. T.

WM. T. JONES,

Associate Justice Supreme Court, W. T.

Extract from the biennial message of Governor McCook, of Colorado:

"The grasses throughout the whole territory are so abundant and so nutritious that stock raising is destined to be one of the most essential elements of our permanent prosperity.

"The natural increase of sheep in the territory is one hundred, and of Cattle nearly eighty per cent. per annum. And as there is almost no limit to the pastoral capabilities of the country, so there should be no limit to the increase of stock. The natural grasses of our hills and valleys are equal in nutritious qualities to the hungarian or other cultivated grasses of the east, and their abundance is such that the herds of a dozen States could here find pasturage; and the winters are so mild that shelter or hay is unnecessary."

Extract from the message of Governor J. A. Campbell, of Wyoming:

"In the chosen home of the buffalo and the other gramnivorous animals, which have for unnumbered years roamed over our plains and subsisted upon their succulent and nutritious grasses, it would seem superfluous to say anything in relation to our advantages as a stock growing country, or the wisdom and propriety of passing such laws as will give protection to herds and flocks, and thus encourage our people to engage in pastoral pursuits. In a climate so mild that horses, cattle and sheep and goats can live in the open air through all the winter months, and fatten on the dry and apparently withered grasses of the soil, there would appear to be scarcely a limit to the number that could be raised.

"There is an old Spanish proverb that 'wherever the foot of the sheep touches the land turns into gold,' and the dry, gravelly soil of our plains is peculiarly adapted for raising sheep, for while it produces the richest of grasses for their consumption, it is of a character that preserves their feet from the diseases most fatal to the flocks. As it is well known that the finer wools are grown at great altitudes, we should be able to supply the world with almost unlimited quantities of the best wool. While it may be justly deemed a reproach to the country a large that the United States has been for years past an importer of wool to the average amount of 50,000,000 pounds per annum, it is a source of satisfaction to us to know that there is a ready market at our doors

among our own countrymen for so large an amount of all that we can grow.

"It is not sheep alone of the wool bearing animals that can be made so profitable on our plains. Our mountain ranges are in many respects reduplications of the country in which the most valuable and delicate varieties of the Cashmere and Angora goats are raised, and those flocks which browse on the shrubs growing at high altitudes in the rare, high atmosphere of the mountains invariably produce the largest and finest fleece. The importation of these goats into our territory should be encouraged.

"Unnumbered cattle must be raised and fattened on our soil, and with the cheap railroad freights which we have a right to expect, the herdsmen of our plains, while advancing his own fortunes, will prove a benefactor to the laboring classes of the east by bringing the price of the best beef within the limit of their means."

In conclusion, to be brief, I think no one can deny nor doubt that the above testimony proves conclusively that we have a 1,000,000,000 acres of pasturage, where wool can be produced as cheap as in Buenos Ayres, where 100,000,000 sheep can graze, summer and winter, where beef and mutton can be raised at so low a price that the poorest paid laborer can have an abundance, and that we should be exporters of all classes of animal productions, instead of dependent importers. It does not need prophetic vision to see, within the next quarter of a century, a time equaled by Mr. Ward's and Mr. Major's experience, 20,000,000 of people west of the Missouri river, with more live stock than is in the States east of it, and our country providing the wool to run the spindles of the world. There is much more to be said in connection with this subject, such as descriptions of particular locations for stock, but I have treated of this subject at such length that I forbear. My excuse for such great length is the magnitude of this national subject.

In my next I will take your readers to the numerous valleys along the line of the Union Pacific railroad, where they can see these horses, sheep and cattle, and where they can open stock ranches and become the owners of flocks and herds.

ARTICLE NUMBER II.

PLATTE VALLEY TO JULESBURG—EASTERN LIMIT OF WINTER GRAZING—CLIMATE, SNOW AND RAIN FALL—MEAN ANNUAL TEMPERATURE—HOMES AND GRAZING FOR ONE HUNDRED THOUSAND STOCKMEN.

IN my former article on grazing I spoke of grazing in the trans-Missouri country in a general way. In this article I propose to speak of the various localities along the line of the Union Pacific railroad, which afford grazing facilities, and which invite the stock-man and herder to come and possess them. I give the country contiguous to the line of this railroad in this article only, as I propose to speak of separate sections in separate articles, and because the people who are now emigrating will choose the country first which has railroads, and such other advantages as railroads bring.

I think the eastern limit of this great belt of natural pasturage in which winter grazing is sure, is along the ninety-eighth degree of longitude west from Greenwich, which crosses the Union Pacific railroad near Grand Island. West of that point I consider all the country north and south of the Union Pacific railroad as safe summer and winter grazing. This country which I shall speak of now is all in the valley of the Platte, which, with its tributaries, forms one of the finest grazing valleys in the world. From this eastern winter grazing limit, say Grand Island, the valley of the Platte to the source of its mountain streams, if measured by the South Platte through Colorado, and including the South Park, is not less than six hundred and fifty miles. The valley of the North Platte, from where it joins the South Platte to its mountain source in the North Park, is eight hundred miles, making in the whole

fourteen hundred and fifty miles of Platte valley in which there is winter grazing. These valleys will average more than forty miles wide, including their tributaries, giving fifty-eight thousand square miles, equal to 37,000,000 acres, a country one-fourth larger than New York or Pennsylvania. Yet the small portion of New York State devoted to pasturage furnishes grass to 7,000,000 gramivorous animals—horses, sheep and cattle, valued at more than \$575,000,000.

Thus by comparison we have a realization of the boundless extent of our country and of its capabilities and future wealth.

To be more particular as to the localities where stock growers can locate:

Besides the immediate valley of the Platte proper, there is first the Loup Fork of the Platte, which is two hundred miles long, and including the valleys of its tributaries, Beaver, Shell and Calamas creeks, north branch Dismal creek, and south branch, and this valley will average thirty miles wide, giving in this one little valley 4,000,000 acres of pasturage. It is all within sixty miles of the Union Pacific railroad, and has timber along the banks of its clear, running streams, and good building stone, and is a fine grain growing country.

The temperature of this region for the whole year is 50° fahrenheit.

The mean temperature for spring is 47°; for summer 75°; autumn, 50°; winter, 25°. The annual rain fall is twenty-five inches.

The rain fall for spring is eight inches; summer ten to twelve inches; autumn four inches; winter one and one quarter inches (eighteen inches snow.)

The lands are mostly government, and can be bought at government price. Prairie creek and Wood river run parallel to Loup Fork, just south. Wood river is seventy-five miles long, and Prairie creek fifty miles. The area of these two valleys must be eight miles by one hundred and twenty-five, giving us over half a million acres, whose temperature and rain and snow fall is the same as the Loup Fork valley, and settlers would be nearer the railroad.

These lands are alternately government and railroad.

After leaving Wood river for the west, there are no considerable tributaries to the Platte till you reach the North Platte.

The country affords fine grass and water. Thousands of tons of hay can be cut on the bottoms of the Platte. Wood is not plenty, but you are nearing the great coal fields, where fuel is cheap and where lumber can be obtained from the forests of the Rocky mountains.

The temperatures as we proceed west are a little warmer, but there is very little change in the climate of the country except that the rain fall the whole year is only twenty inches.

For the excellence of the grazing in all this region, including Wood river, and as far west as Julesburg, a distance of more than two hundred miles, I refer your readers to Col. James R. Porter, Plattsmouth; James E. Boyd, President of the Omaha and Northwestern railroad; Mr. John W. Hugus, First National Bank of Omaha; John Gilman, Esq., Nebraska City; J. A. Morrow, Director of the Omaha and Northwestern railroad, and Benjamin Gallagher, Territorial Auditor, Wyoming; and to the thousands of freighters who have wintered stock on every mile square of this ground since 1849.

Stock raisers and emigrants will bear in mind that this is not only a grazing country, but that all the cereals and corn and vegetables grow to perfection, and that the climate and soil is such as to make it a good fruit country.

From observations taken at Fort Kearney since 1849, we know that there are no frosts in May nor in September, and the truly dry winters insure safety to fruit trees.

The islands in the Platte, from Kearney to Denver, are covered with wild grape vines which grow grapes in abundance.

This country, which I have described from Grand Island to Julesburg, including the valley of the Loup Fork, contains from 10,000,000 to 12,000,000 acres of as good and as reliable winter grazing as there is in Buenos Ayres, or South Africa or Australia, or any other country in the world. Wool can be raised as cheaply here as in those countries, where they pay land and water transportation of thousands of miles; sell their wool for from twelve to twenty-five cents, and grow rich at that price. The country which I have described in this article affords grass enough for 7,000,000 sheep. In Ohio there are to-day 6,500,000 sheep, which, considered alone for their wool, after paying the interest of capital invested in their

pasture and meadow lands, and the cost of feeding through the six months of winter, do not pay one cent on the capital invested in themselves.

These 6,500,000 sheep of Ohio could be transferred to this Platte valley, and besides making room at home for paying investments, would pay immensely in this country, where the cost of keeping sheep is only the cost of herding. Here, in a word, the stock-man can find broad acres of prairie covered with green, nutritious grasses in summer, and in winter with perfectly cured uncut hay; and a climate so mild that stock require no shelter in winter but nature's shelter—the bluffs and timber on the streams, and government and railroad lands, and pure running water in abundance, and the healthiest of climates, and a railroad to carry the produce to market, land in small quantities for the stock-raiser of small means; land in large bodies for the stock-man with his great flocks and herds; land in still larger bodies for the colonists.

In my next article I will speak of the South Platte and its tributaries, with the advantages they afford for grazing.

ARTICLE NUMBER III.

THE UPPER SOUTH PLATTE—VALLEYS OF LODGE POLE CREEK, HORSETAIL, BEAVER, PAWNEE, CROW, LONE TREE, BIJOU, KIOWA, BEAR, CACHE LA POUDE, THOMPSON AND ST. VRAINS—TWELVE MILLION ACRES OF PASTURE LAND.

MY second article spoke of all that country west of Grand Island, up the Platte valley to Julesburg, the mouth of Lodge Pole creek. In this article I propose to speak *generally* of the South Platte valley to, and including the South Park, as a grazing country, with its soil, temperature and snow and rain fall.

I say *generally* because no single article could do more than generalize of such a wide country, with so many beautiful, and I had almost said, incomparable mountain streams, with their accompanying valleys.

In the whole of America, north and south, there is not a more beautiful, a more fertile, a better watered, nor a finer and healthier climate, nor better and more reliable grazing, both summer and winter, than are in the upper valleys of these two Plattes.

The first tributary of the South Platte in this region is the Lodge Pole creek, which, from its mouth at Julesburg, is fully one hundred and ninety miles long. This stream takes its rise in the Black Hills, north of the Union Pacific railroad, and at Cheyenne is not more than fifteen miles from the railroad. The whole valley is within easy reach of the railroad, and seventy miles of it is along the railroad line.

It abounds in rich grasses, and is well protected by the bluffs which border it. Horses, sheep and cattle have been grazed in this

valley for fifteen years. It is through this valley that the old Cheyenne pass overland road lies, over which so many thousands of wagon loads of emigrants have passed. At Sidney station, in this valley, Charles Moore, of the firm of Moore Brothers, has his stock ranche. He grazes several hundred head of stock and three thousand and sheep.

He has found the grasses, climate and water perfectly adapted to both summer and winter grazing. The raising of sheep and cattle with him is exceedingly remunerative.

In this valley there is room for several hundred stock-men.

The next tributaries of the South Platte are Horsetail, Beaver, Pawnee Springs, Crow, Howard and Lone Tree creeks, on the north side of the Platte, and Beaver, Bijou, Kiowa and Bear creeks on the south side. These large streams, with unnamed smaller ones, drain a country one hundred and fifty miles north and south, and about two hundred miles east and west.

Some of these streams are large enough to be entitled to the name of rivers, such as Crow and Lone tree, each more than one hundred miles long; and Beaver, Bijou, Kiowa and Bear, each fully one hundred miles long.

Crow creek takes its rise in the Black Hills, running east to the railroad line; there it runs south to the Platte. Its whole length furnishes beautiful bottom lands for hay, and high bluffs for complete protection in winter. On this creek alone are innumerable sites for stock ranches. Lone tree is the same.

Good water, good bottom lands, good hay, good shelter and exceedingly good grazing, coal and iron abound in this region.

The Beaver, Bijou and other creeks south of the Platte cannot be excelled for grazing in all respects, and the lands are fine farming lands.

We now come to the Cache la Poudre, which, with the Big Thompson, Little Thompson, St. Vrain, and a hundred other and smaller creeks, drain the Snowy Range for nearly a hundred miles.

The whole region, from the head of the Cache la Poudre south to Denver, is perhaps the best watered and the most desirable locality for all purposes—fruit, farming or stock raising, in America. It would take a book to particularize all these clear, swift mountain streams. It will be sufficient to say that the region drained by the

streams mentioned, beginning with Lodge Pole creek on the north, and ending on the south with Clear and Bear creeks, contains 12,000,000 acres of unequaled pasture lands.

Thousands of stock-men can find the best of locations by living streams, with bottom lands for small grain and vegetables, and corn, if any man in the midst of an unbounded country of grazing, where sheep and cattle need no hay nor shelter, will still adhere to such a slavish life as corn raising.

There is plenty of timber in the mountains and at the foot of the hills, and coal, iron, limestone and clay.

There are fine settlements in the most of this region, and still room for untold numbers more of people who could settle within reach of railroads, mails, schools and churches.

The mean temperature of this region for spring is 42° to 45° ; for summer 75° ; for autumn 50° to 55° ; for winter 30° to 32° ; for the year it is 50° to 55° . In the spring eight inches of water falls; in the summer six inches; autumn four inches. In the winter eighteen inches of snow falls, equal to one and one-half inches of water. The mean temperatures and average snow and rain falls are only the generalities of climate. I will only further say that the winds are mostly from the west, and temper our climate, coming as they do from the great stream of the thermal waters that wash the western coast. The rain fall of the spring is from gentle continuous rains; that of summer is from showers. The snow falls in small quantities, and soon disappears, the quantity being too small, and lasting too short a time to make sleighing. In stating the number of clear and cloudy days, the chief beauty of our climate will appear.

I have taken meteorological observations for nearly six summers, with great care, and have fully studied the results, and I think that out of three hundred and sixty-five days in the year, more than three hundred are clear.

Those of your readers who live in a region of fogs, clouds and rains can form an estimate of our Trans-Missouri climate from the three hundred days of unclouded sunlight and blue sky.

ARTICLE NUMBER IV.

NORTH PLATTE VALLEY—NORTH PARK—BIG AND LITTLE LARAMIES—SWEETWATER—FIFTEEN MILLION ACRES OF UNSURPASSED WINTER AND SUMMER GRAZING IN THE REGION OF PINE FORESTS AND COAL FIELDS.

ARTICLES number two and three spoke of the South Platte and its tributaries. In this article I shall briefly describe the pasturage in the great valley of the North Platte and its tributaries.

The distance from the mouth of the North Platte, where it joins the South Platte, on the Union Pacific railroad, to its sources in the great Sierra Madre, whose lofty sides form the North Park, in which this stream takes its rise, is more than eight hundred miles. Its extreme southern tributaries head in the gorges of the mountains one hundred miles south of the railroad, and receive their water from the melting snow of those snow-capped ranges. Its extreme western tributaries rise in the Wahsatch and Wind river ranges, sharing the honor of conveying the crystal snow waters from the continental divide with the Columbia and Colorado of the Pacific. Its northern tributaries start oceanward from the Big Horn mountains, three hundred miles north of the starting point of its southern sources.

It drains a country larger than all New England and New York together. East of the Allegheny mountains there is no river comparable to this clear, swift mountain stream in its length or in the extent of country it drains.

THE VALLEYS OF THE NORTH PLATTE.

The main valley of the North Platte, two hundred miles from its mouth to where it debouches through the Black Hills out on to the

great plains, is an average of ten miles wide. Nearly all this area, two thousand square miles, is covered with a dense growth of grass, yielding thousands of tons of hay. The bluffs bordering these intervals are rounded and grass-grown, gradually smoothing out into great grassy plains extending north and south as far as the eye can see.

ITS TRIBUTARIES.

The tributaries on the north side of the Platte are Blue Water, Coldwater, Hill creek, Rawhide, Muddy Willow, Shawnee, Slate and Sweetwater. On the south they are Ash, Pumpkin, Larrons, Dry Horse, Cherry, Chugwater, Sybellie, Big Laramie, Little Laramie, Carter, Cottonwood, Horseshoe, Elkhorn, Ra la Prelo, Boisee, Deer creek, Medicine Bow, Rock creek, Douglas, and north, south and middle forks of the main Platte.

These streams, with their smaller feeders, intersect in all directions a great pastoral land, interspersing it with rich fertile valleys, and draining at least 40,000,000 acres, affording water for countless herds. Most of the banks of these streams are bordered with timber. Cattle have been wintered on these streams north of Cheyenne, along the base of the Black Hills, around Fort Laramie, for twenty-five years.

CAPACITY FOR STOCK RAISING.

Of this country, Alexander Majors says, in a letter to the writer of this article: "The favorite wintering grounds of my herders for the past twenty years, has been from the Cache la Poudre on the south, to Fort Fetterman on the north, embracing all the country along the eastern base of the Black Hills." It was of this country that Mr. Seth E. Ward spoke when he says: "I am satisfied that no country in the same latitude, or even far south of it, is comparable to it as a grazing and stock-raising country. Cattle and stock generally are healthy, and require no feeding the year round, the rich 'bunch' and 'gramma' grasses of the plains and mountains keeping them ordinarily fat enough for beef during the entire winter."

All this region east of the Black Hills is at an elevation less than five thousand feet.

THE CLIMATE.

The climate, as reported from Fort Laramie, for a period of twenty years, is 50° fahrenheit. The mean temperature for the

spring months is 47° , for the summer months 72° , for autumn 50° , for winter 31° .

The annual rain fall is about eighteen inches, distributed as follows: spring, 8.69 inches; summer 5.7 inches; autumn 3.96 inches. The snow fall is eighteen inches. It is of this region that Col. C. H. Alden, Post Surgeon, Fort D. A. Russell, speaks when he says: "The largest snow fall so far, in one month, has been 3.097 inches. The snow in this vicinity rapidly disappears after falling, and it is very rare that there is a sufficient quantity so that it remains long enough to give sleighing."

All this country of the North Platte, east of the Black Hills, is within easy distance of the railroad at Cheyenne, Pine Bluffs, Sidney and Julesburg. An abundance of timber can be had in the Black Hills for fencing and building purposes, for all ranche and stockmen in any of these valleys.

EXTENT AND RESOURCES OF THE NORTH PLATTE BASIN.

There is in this North Platte basin, east of the Black Hills divide, at least 8,000,000 acres of pasturage, with the finest and most lasting streams, and good shelter in the bluffs and canons. As I have said before, we can only judge of the extent and resources of such a region by comparison. Ohio has 6,000,000 sheep, yielding 18,000,000 pounds of wool, bringing her farmers an aggregate of \$4,500,000. This 8,000,000 acres of pasture would at least feed 8,000,000 sheep, yielding 24,000,000 pounds of wool, and at the same prices as Ohio wool, \$6,000,000. Now, that money, instead of going to build up ranches, stock farms, store houses, woolen mills, and all the components of a great and thrifty settlement, is sent by our wool growers and woolen manufactures to Buenos Ayres, to Africa and Australia, to enrich other people and other lands, while our wool growing regions remain undeveloped.

THE GREAT LARAMIE PLAINS.

As you follow the North Platte up through the Black Hill canon, you come out on to the great Laramie plains, which lie between the Black Hills on the east, and the Snowy Range on the west. These plains are ninety miles north and south, and sixty miles east and west. They are watered by the Big and Little Laramie rivers, Deer creek, Rock creek, Medicine Bow river, Cooper creek, and other trib-

utaries of the North Platte. It is on the extreme northern portion of these plains, in the valley of Deer creek, that Gen. Reynolds wintered during the winter of 1860, and of which he remarks on pages seventy-four and seventy-five, of his "Explorations of the Yellowstone," as follows:

GEN. REYNOLD'S REPORT.

Throughout the whole of the season's march the subsistence of our animals had been obtained by grazing after we had reached camp in the afternoon, and for an hour or two between the dawn of day and our time of starting. The consequence was that when we reached our winter quarters there were but few animals in the train that were in a condition to have continued the march without a generous grain diet. Poorer and more broken down creatures it would be difficult to find. In the spring all were in as fine condition for commencing another season's work as could be desired. A greater change in their appearance could not have been produced, even if they had been grain fed and stable-housed all winter. *Only one was lost*, the furious storm of December coming on before it had gained sufficient strength to endure it. *This fact, that seventy exhausted animals, turned out to winter on the plains the first of November, came out in the spring in the best condition, and with the loss of but one of the number, is the most forcible commentary I can make of the quality of the grass and the character of the winter.*

These plains have been favorable herding grounds of the buffalo away back into the pre-historic age of this country. Their bones lie bleaching in all directions, and their paths, deeply worn, cover the whole plain like a network. Their "wallows," where these shaggy lords of the animal creation tore deep pits into the surface of the ground, are still to be seen. Elk, antelope and deer still feed here, and the mountain sheep are found on the mountain sides and in the more secluded valleys of the Sierra Madre range, all proving conclusively that this has afforded winter pasturage from time immemorial. Since 1849 many herds of work oxen, belonging to emigrants, freighters and ranchmen, have grazed here each winter. It is on these plains, in the Laramie valley, that Messrs. Creighton & Hutton have their sheep, horses and cattle, and of which Mr. Edward Creighton, President of the First National Bank of Omaha, says:

EXTRACT FROM EDWARD CREIGHTON'S LETTER.

The last four winters I have been raising stock, and have had large herds of cows and calves in the valley of the Laramie. The present winter I have wintered about eight thousand head. They have done exceedingly well. We have lost very few through the whole winter,

and those lost were very thin when winter commenced. We had no shelter but the bluffs and hills, and no feed but the wild uncut grass of the country.

We have had 3,000 sheep the past winter, and they are in the best of order, many are being sold daily for mutton. Like the cattle, they require no food nor shelter.

The high, rolling character of the country, and the dry climate and short, sweet grass of the numerous hillsides, are extremely favorable to sheep raising and wool growing.

There are many other stock raisers on the plains besides Creighton & Hutton, and there is room for hundreds more. On this plain the settler is near the great forests of pine in the mountains, and in the coal fields of the Rocky mountains, with several kinds of iron ore, building stone, limestone and fire clay. The valleys of Rock creek, Medicine Bow and the two Laramies afford large quantities of hay. On these plains alone there is, apparently, no limit to the grazing. The railroad bisects these pasture lands about evenly east and west, giving good facilities for transportation.

NORTH PARK,

South of the Laramie Plains, is the North Park, one of three great parks of the Rocky mountains, so fully described by Richardson, Bross and Bowles. This North Park is formed by the great Snowy Range. It is a valley, from six to eight thousand feet high, ninety miles long and forty miles wide, surrounded by snowy mountains from thirteen to fifteen thousand feet high. These mountain tops and sides are completely covered with dense growths of forests, the lower hillsides and this great valley are covered with grasses. The forests and mountains afford ample shelter from sweeping winds. Here, as well as on the Laramie Plains, the buffalo grazed in great herds, and here the Ute hunters, from some hiding canon, dashed down among them on their trained and fleet ponies, shooting their arrows with unerring aim on all sides, and having such glorious sport as kings might court and envy. The Indians are now gone from this valley, and the buffalo nearly so. On the 2,000,000 acres in this valley not twenty head of cattle graze.

This great park, splendidly watered by the three forks of the Platte, and by a hundred small streams that drain these lofty mountains of their snows and rains—rich in all kinds of nutritious grasses, plentifully supplied with timber, on the tertiary coal fields,

with iron, copper, lead and gold, has not one real settler. There are a few miners, but where there should be flocks and herds of sheep and cattle without number, there is only the wild game—the elk, antelope and deer.

THE REPUBLICAN VALLEY.

The great valley of the Republican river is not attracting that attention from the grain and stock raiser that its resources entitle it to, because it lies between two great railroad lines.

This country west, as far as the one hundredth meridian, is well known to your readers, and is receiving many settlers this season. West from that point, which would be south from Ft. Kearney, to the sources of the stream, east of Denver, Colorado, this valley is two hundred and fifty miles long, and one hundred miles wide, giving us twenty-five thousand square miles or 16,000,000 acres of rich, fertile country.

This whole country is well divided into plain, bluff and valley lands. There is not a rod of these 16,000,000 acres that is not the finest of grazing, and which is not covered with a luxuriant growth of blue, buffalo, bunch or gramma grasses.

This country is exceptionally well watered by the Republican river and its tributaries, while from the north are Elm Spring, Turkey, Medicine, Stinking Water, Red Willow, Little, Eight Mile, Black Wood, White Man's creek, and Arikearea Fork. On the south there is Prairie Dog, Sappa, Beaver, White Willow, Box Elder, Ash, Cottonwood, and North and South Forks. These streams, with their smaller feeders, intersect this whole basin in every direction. The valley of the Republican is from eight to ten miles wide. The smaller streams have narrower valleys, but they all afford luxuriant low, and blue-joint grass for hay. The bluffs or divides between the streams are covered with upland blue-joint, bunch, buffalo and gramma grasses. There are no streams on the plains which compare with the Republican and its tributaries for the timber which they produce. On their bottom lands there are groves of white oak, ash, cottonwood and elm.

The altitude of this valley is much lower than that of the Platte, and is therefore much warmer. The mean annual temperature of this valley must be 53° fahrenheit. The annual rain fall is eighteen inches. The snow fall is about twenty inches. There is an abund-

ance of timber for building and fencing. Limestone abounds in every locality; so does fire-clay. Coal out-crops appear in all the valleys. The winter grazing is not excelled anywhere. It is the favorite grazing ground, summer and winter, for untold and uncounted herds of buffalo. I do not believe there are as many stock cattle in any State in the United States, Texas excepted, as there are buffalo between the Kansas Pacific and Union Pacific railroads in this basin; elk, white and black tailed deer, and antelope are also in great numbers here.

New York, Pennsylvania, Ohio, Michigan and California are the five largest stock and wool growing States, aggregating 16,000,000 sheep, which annually yield 50,000,000 pounds of wool, worth in market \$16,000,000. The 16,000,000 acres in this valley would graze all these sheep of these States, and still have millions of acres of grasses untouched. All these valley lands will grow all the cereals and vegetables of Colorado.

Much of this valley is in Colorado, and its trade must, when developed, go to that country. There are two railroads pointing from the Missouri river west, up this valley to the mountains, which will soon be built through all these lands. I do not know of any more inviting locality for grazing or agriculture than these valleys of the Republican.

The idea of anticipating ever seeing 16,000,000 sheep, with an annual production of 50,000,000 pounds of wool in any of our valleys, may be looked upon as insane, but such is not true. Australia received her impetus in immigration and settlement in 1850. In 1855 her wool was hardly known. In 1865 the manufacturers of France imported two thousand and three hundred tons, or 56,000,000 pounds, of Australian wool. That was only one-half her production, as England and other countries were also buyers of her wool. Thus, an annual production of 112,000,000 pounds of wool sprang into existence in ten years in Australia. Is it, therefore, unreasonable to anticipate a production of one-half that quantity in the same time in our own country?

ARTICLE NUMBER V.

A WEEK AMONG THE HERDS AND FLOCKS ON THE PLAINS—THE CATTLE, HORSES AND SHEEP OF CREIGHTON, HUTTON, AND ALSOP ON THE BIG LARAMIE—J. W. ILIFF'S RANGE ON CROW CREEK—GREAT HERDS OF PATTERSON BROTHERS, JOHN HUTTON, AND OTHERS, IN NORTHERN COLORADO—ADVANCED PRICES OF CATTLE, AND BRILLIANT PROMISE OF THE STOCK BUSINESS IN THE TRANS-MISSOURI COUNTRY IN THE FUTURE—MARKETS EAST AND WEST—LOW RAILWAY RATES.



THE season of 1870 has been a memorable one in the stock business on the Plains. It commenced in doubt, but closes with unlimited confidence in the complete practicability and profits of stock growing and winter grazing.

INCREASE OF CATTLE IN THE WEST.

The number of cattle in the country west of the Missouri river and east of the Snowy Range is now double, if not four times larger than in 1869. Its present magnitude and future prospects entitle it to a full share of public attention.

SHIPMENTS OF BEEF TO EASTERN MARKETS.

Two years ago our beef and cattle were brought from the east. To-day, cattle-buyers from Chicago and New York are stopping at every station on our railroads, and buying cattle in all our valleys for eastern consumption. It is safe to predict that fifteen thousand head of beeves will be shipped from our valleys east the present season. During the past week I have visited some of the great herds on the Plains, and will give your readers an account of them.

THE GREAT HERDS.

The herds of Edward Creighton, Chas. Hutton, and Thos. Alsop are grazed on the Big Laramie, which is a tributary of the North Platte. The Laramie Valley is between the Black Hills and the Medicine Bow Range. It is about one hundred miles long, thirty miles wide. It is about midway in this valley, and six miles from the railroad station at Laramie, that these gentlemen have located their stock ranches. They have extensive houses, stables and corrals. As we leave the station on a beautiful August morning, (which is characterized by the clearest of blue skies and golden sunlight,) you see Mount Agassiz directly in front of you, while Mount Dix and Mount Dodge, with snow-covered tops, are respectively on the right and left.

We follow up the Laramie on a smooth road, which is like rolling the wheels over a floor. We follow the windings of the stream, which is as clear as crystal, and pure as the snow from which its waters have just come.

A HERD OF FOUR THOUSAND,

we first come to, half and three-quarter breed cows; that is, there are none more than one-half Texan, and many only one-fourth. They are known among cattle-dealers as short-horned Texas cattle. There are three thousand and six hundred calves in this herd that are from three-eighths to one-half Durham. These cows have been here on the Plains one winter and two summers. All the dry cows are exceedingly fat and many of the cows, with calves by their sides, are good beef. In this herd are many two year olds and yearlings, all fat enough for the butcher, so far as their condition is concerned.

In all this herd there are as many as nine thousand head of cattle; four thousand cows, three thousand and six hundred calves, one thousand two-year-olds and five hundred yearlings.

THEIR HABITS.

They range over a country fifteen by twenty miles. The cows and calves run together the year around, and in fact are never separated, but run in families of four, generally, cow, calf, yearling and two year old. They are to be found on the river bottoms in the middle of the day, where they had come about eleven o'clock for water. They return about four o'clock in the afternoon to the high grounds, where the rich bunch and nutritious gramma grasses are abundant,

and feed till night and lie down on the warm, sandy soil till next morning, when they feed till the heat of the day. It is interesting to see the habits of these cattle when unrestrained by herders. They travel back and forth to the water and grazing ground in families and little herds, in single file, like their predecessors of the soil, the buffalo, forming deep paths or trails like them. After having spent three or four hours looking at this herd we pass up the river to the

BEEF HERD,

which consists of three thousand and five hundred fat Texas cattle, in the very highest order at which grass-fed cattle arrive in this world. These cattle have been here one or two seasons and will weigh, upon an average, live weight, thirteen hundred pounds. They could all be sold to-day for eastern markets, at good figures. They have three months of good weather to fatten yet this season, when, with five thousand more, bought by these enterprising men and on the way here, they will be sold east or slaughtered and sent east in the quarter.

There is, still higher up the stream and nearer the mountains, a stock herd of yearlings and two year olds, that occupies our time for an hour or two.

BLOODED STOCK CATTLE.

Then we cross over to Sand Creek, a small branch of the Laramie, and see the herd of American cattle, which, including Hutton's and Alsop's, number four hundred, mostly cows. They are as fine stock as can be found anywhere. Among this herd are several fine graded Durham bulls and two thoroughbreds that were bought in Ohio at high prices. Three parties are owners of three hundred blooded bulls, from which the finest calves are being raised by the cross between them and the graded Texan cows. It is interesting for the stock man to see these calves, which show the Durham so clearly in every instance another proof of the general law that the stronger and better blooded of the two races will give form and impress to the progeny. This fact is remarkably illustrated in these herds, the second and third crosses, leaving no trace of the Texan blood.

Here on this ranche are three hundred

BROOD MARES

and some young stock, yearling and two year old colts which have been raised here and have never been fed nor sheltered. They are

as large and fine colts as are raised anywhere. These brood mares and colts are herded but never stabled nor fed winters.

SHEEP.

We next proceed to their flocks of sheep which in all number more than ten thousand head, besides the lambs—of these there are three thousand—making in all thirteen thousand. Some of these are from New Mexico, but the great majority are from Iowa, and are fine Merino sheep. They will average fully five pounds of wool per head. Ample shelters have been provided them in case of storm. Much the larger number of these flocks are ewes. The owners expect to raise six thousand lambs, and to shear sixty-five thousand pounds of wool next year.

These parties have about five miles of fence enclosing hay grounds, pastures for riding stock, and other purposes. They have in all, more than \$300,000 invested here, which is a sufficient commentary upon their enterprise, foresight and courage. They are the great stock princes of the mountains. Of all living men they have done most to solve this question of winter grazing.

We next proceed to

THE LITTLE LARAMIE,

where Messrs. Mantle & Bath have four hundred head of American and half-breed stock; they are at the old stage road crossing, and have some fine blooded stock. Above them, behind Sheep Mountain, directly under the white top of Mt. Dodge, named after Gen. Dodge, on the head of the Little Laramie is a valley twenty miles long and ten miles wide, divided about equally by the North, Middle and South Forks of that stream. These are rapid running streams that never freeze in winter. They have groves of timber on their banks and bottom lands, furnishing shade in summer and shelter in winter. This valley is a pocket in the mountains, having only one narrow point of ingress and no egress, but by same way. Here are two thousand nine hundred cattle owned by Lambard & Gray, of New York, Captain Coates, of the army, and the writer. Three men are able to herd them, from the nature of the valley, and it is certainly a cattle paradise. Of this herd, twelve hundred are cows; seven hundred, two year olds; three hundred yearlings, and seven hundred calves. This stock is short horned Texan, and a good lot of stock cattle.

ILIFF'S HERDS ON CROW CREEK.

After leaving this herd, we take a three hours' run on the railroad, which takes us across the Black Hills, to Cheyenne, which is the headquarters of J. W. Iliff. His cattle range is down Crow Creek, to the Platte, twenty to thirty miles. On this grazing ground he has six thousand seven hundred cattle, classed as follows: Three thousand five hundred beeves, two thousand cows, and twelve hundred calves. The stock cattle are half-breeds, except yearlings and calves, which he has raised, and which show the Durham cross. The beeves are heavy, fat cattle, ranging in live weight from twelve to fourteen hundred pounds. This whole range down Crow creek, from Cheyenne to the Platte, affords the best of grasses, and the creek bluffs shelter the stock completely from storms. Mr. Iliff has been the owner of great herds of cattle in the last twelve years, and is firm in the faith that this is the place to raise beef for eastern markets. His cattle have sold in Chicago market from five to six cents per pound live weight this season. The whole three thousand five hundred head of beeves will be shipped east this fall. Mr. Iliff is another of those who have demonstrated to the world that we have winter grazing, and in so doing he has made a fortune. Long may such men live to enjoy their fortunes.

On the other side of the Platte, on the Bijou, are the herds of the

PATTERSON BROTHERS, REYNOLDS AND JOHN HITSON.

These herds number eight thousand head of cattle, six thousand of them being beef cattle. The Patterson Brothers are great cattle raisers and dealers. They own ranches on the Arkansas river, at Bent's old fort, and on the Pecos river, below Fort Sumner, in New Mexico. They have handled hundreds of thousands of dollars worth of cattle in the last five years.

John Hitson is another of the great cattle raisers and dealers in New Mexico. His herds are numbered by the thousands. His operations are transferred to Colorado now, and so are those of the Patterson Brothers.

ON BOX ELDER CREEK,

which is a branch of the Cache La Poudre, is the ranche and stock range of Mr. Whitcombe, an old settler of Colorado. He has two thousand stock cattle, and some fine blooded bulls. This range and shelter is perfect.

SHIPMENTS OF CATTLE WEST.

Reed & Wyatt, on the Platte, nearer Denver, have one thousand head of stock and beef cattle. They are about adding largely to their number.

Farwell Brothers, Greeley, have two hundred head of fine American cattle.

Baily, on the south side of the Platte from Greeley, has four hundred head of Durham and Devon stock, and two thousand sheep.

Geary, on the Platte, has three hundred head of American cattle.

The Lemons, at Greeley, have four hundred head of American stock. In this neighborhood Ashcraft has four hundred head of American cattle. Munsen has eight hundred head of cattle and three thousand sheep. Up the Cache La Poudre are twenty large stock raisers.

On the Big and Little Thompson's there are some five herds of blooded stock.

After you leave Evans and go south towards Denver the whole country seems one pasture covered with stock. I traveled over this same ground in 1869 and I am sure there are fully three times as many cattle here now as then. There are hundreds of farmers on the Lone Tree creek, Cache La Poudre, Big and Little Thompson's creeks, St. Vrain, and the many other streams which flow from the mountains to the Platte, who have from one hundred to one thousand head of cattle, a description of whose herds and grazing grounds would take too much space in an article of this kind.

SHIPMENTS OF CATTLE WEST.

Colorado has sold an immense number of cattle this season to Montana, Idaho, Nevada and Utah. It is safe to say that Montana will receive twenty thousand head of cattle during the season of 1870, four-fifths of which are from Colorado. Many have gone to Utah, Nevada and Idaho from the same source, and yet, ten years ago, the commercial and stock growing people of the east did not know that Colorado contained a thousand acres of grass land. To-day they have no idea of the magnitude of her grazing resources.

Leaving Colorado we find some herds along the base of the Black Hills.

NORTH OF CHEYENNE.

H. Kelley, on the Chug, has five hundred stock cattle. He sold one hundred head of American beeves at seventy dollars per head.

Messrs. Ward & Bullock, of Fort Laramie, have two hundred head of American cattle.

Adolph Cuny, so long a resident on the North Platte, has a herd of one thousand stock cattle between Forts Laramie and Fetterman.

Between Cheyenne and Sidney, on the line of the railroad, there are several small herds. At Sidney are the

MOORE BROTHERS,

who have twelve thousand sheep and lambs and fourteen hundred cattle. Four hundred of the latter are American and very fine. The sheep sheared an average of five pounds of wool per head last spring. They are graded Merinos, and are in fine condition. There is no disease among them. The Moore Brothers were ranchemen on the South Platte prior to the day of railroads, and are about returning to that stream for grazing. Their place is the valley station of olden fame on the stage road. Above them on the Platte, at the old "junction," Mr. Mark Boughton has two thousand five hundred stock cattle. He has as fine a cattle range as there is in the world, not excluding the Pampas of South America nor table lands of Australia.

Farther down the Platte, at O'Fallon's Bluffs, on the North side of South Platte,

CREIGHTON AND PARKS

have three thousand five hundred stock cattle, four hundred of which are Durhams. They range twenty miles up and down the Platte. Near them, below, is the herd of Mr. Keith, of North Platte Station, who has about one thousand head.

Mr. M. H. Brown has five hundred head of stock cattle and beeves near the same place. Across the Platte, in the neighborhood of McPherson, the Bent Brothers have one thousand head of stock cattle, and will add another thousand the present season. Messrs. Carter & Coe have a large herd near there, which numbers near a thousand. Mr. Benjamin Gallagher has twelve hundred head at the old Gilman ranche, twelve miles from McPherson.

PROGRESS THIS SEASON.

More real progress has been made in stock matters west of the Missouri this season than in all time before. We have not only added to the numbers of our herds and flocks, but we have given confidence to all our stock growers and to eastern people in the

permanency and profit of grazing in the trans-Missouri country. We are now in easy reach of eastern markets.

THE RAILWAYS

are landing the heaviest cattle in Chicago from the Rocky Mountains at nine and ten dollars per head; we can sell thousands and tens of thousands annually to the Pacific slope, and there is still an all absorbing home demand to stock our thousands of valleys.

THE FUTURE.

As every country in the west receives a new emigrant and his plow turns the grass under, that corn and wheat may grow in its stead, the range of the stock grower is that much contracted and the area of grazing lessened. By reason of the high value of lands for grain growing purposes the people of the country east of the Mississippi river are already coming to us for beef and mutton. Chicago and New York people are enjoying the juicy steaks from cattle fattened on our nutritious grasses that grow in our valleys and on our mountain sides, close up to the perpetual snows of the Rocky Mountains.

As immigration takes up more and more of the pastures east of us for grain, drovers will be obliged more and more to come to us for beef. Texas, the great hive of cattle, has received 300,000 settlers this season. The grazing area of that State has been lessened at least a million acres thereby. Everywhere, wants point to this trans-Missouri country as the future dependence of the east for wool, beef, mutton and horses.

DAIRYING.

THE INCOMING IMMIGRATION—WHAT THE POOR IMMIGRANT MAY DO—EXTENT AND PROFITS OF DAIRYING IN THE EAST—THE SUPPLY OF DAIRY PRODUCTS THROUGHOUT THE COUNTRY NOT EQUAL TO THE DEMAND—THE PECULIAR ADVANTAGES OF THE TRANS-MISSOURI COUNTRY FOR DAIRYING—THE FUTURE OF THIS BRANCH OF INDUSTRY IN THIS SECTION.

IN the present disturbed condition of Europe, the increased burdens of its public debt—the annihilation of great industries by the ravages of war—the destruction of thousands of homes—the increase and apparent permanency of Imperial power and the distrust arising from the uncertainties of its unbalanced nationalities, point to such an immigration—such a swarming forth of peoples in search of homes, paying labor, and bread, as has not, in numbers, been witnessed since these same “northern hives” sent out the myriads of the Teutons and the Cimbri.

WESTWARD, HO!

Not only from Europe may the west expect an unprecedented immigration, but the eastern States will send out their hundreds of thousands from their overflowing cities who ought to escape “crowded garrets and the death-damp of cellars.” They may be expected from the agricultural districts where the worn-out farms, divided too often, are too contracted to be divided again. From the unpacified south, where, between the people and the rulers, there is the same implacability that has existed between the Russian and the Pole, and between the Celt and the English, there is a desire to remove to new lands, new scenes and new associations. From

every old settled country comes up to us the forerunning hum of busy preparation to come to our unoccupied lands. This invading force, armed with the symbolized "plow share and pruning hook," will reach every valley of our trans-Missouri country, from the line of the Southern Pacific on the Rio Grande, to the Northern Pacific on the Red river of the north. The inquiry in every mouth is, "Where shall we go?" "What can we do when there?"

WHAT THE IMMIGRANT WITH SMALL MEANS MAY DO.

In part, I propose to answer the last question. I have already pointed out what the man of means may do with great herds of cattle, sheep or horses; I will endeavor in this to point to independence and wealth, to all associations of families with small means, stout hearts and strong arms. From the earliest history of American agriculture to the present time, one of its most certain and most remunerative branches has been

DAIRYING.

On a rented farm, with a few cows, and skilled, willing labor as capital, a family was on the way to fortune. Few people are aware to what colossal proportions dairying has attained in the last twenty years in this country. In 1840 there were 4,837,043 milch cows in the United States; in 1850 there were 6,385,094; in 1860, 8,728,869; in 1870, 11,000,000. In 1850 the production of butter was 313,345,306 pounds; in 1860 it was 469,681,372. In 1860 the production of cheese was 103,663,927 pounds; in 1870 it was 275,000,000. In 1860 we exported 15,515,709 pounds of cheese; in 1870 we exported nearly 70,000,000 pounds. In 1860 prime cheese sold in New York and Boston for eleven cents; in 1870 it sold for twenty-five cents. Butter averaged in Boston in 1860 twenty-one cents per pound; in 1870 fifty cents.

CHEESE FACTORIES.

In 1851 the first cheese factory was started in the United States in 1870 New York alone had twelve hundred factories, manufacturing 100,000,000 pounds. As enormous as these figures seem, it would be difficult to find more than one-half dozen counties in the whole United States and territories, where the supply of pure milk, sweet, fine flavored butter, and good rich cheese, are anywhere equal to the wants of the people.

THE DEMAND FOR DAIRY PRODUCTS FAR
EXCEEDS THE SUPPLY.

Outside of Franklin county, Vermont; Orange and Herkimer counties, New York; and Kane county, Illinois, can you or your readers point to any place of three thousand people, where all the men, women and children are fed on enough good, wholesome milk, butter and cheese? In the center of millions of acres of rich clover pastures, surrounded by 10,000,000 agricultural people, Chicago in 1868 bought 4,500,000 pounds of New York factory cheese. The Northwestern Dairymen's Association report, that notwithstanding the rapid increase of dairy products, its growth does not keep pace with the consumption, a greater amount having been imported in 1869 than in any previous year.

The St. Louis JOURNAL OF AGRICULTURE says: "St. Louis imports large quantities of butter and cheese from the east, and that the supply of milk is insufficient for city use, and of inferior quality, and that it sells for forty cents per gallon." The Agricultural Report of 1869 reports "milk in Mobile, Alabama, at eighty and ninety cents per gallon;" and so it is in every portion of the country.

THE FOREIGN DEMAND.

There is an unlimited demand for all our surplus in England alone. While we could have a large sale in the West Indies, Central and South America, and South Africa, China and Japan, with their swarms of people, would take fifty thousand tons of butter and cheese annually in exchange for their oriental products. We shall never supply the home and foreign demand, even if we feed every acre of our illimitable pastures. The wealth of some dairying sections is enormous. Herkimer county ships annually 17,000,000 pounds of cheese, and 300,000 pounds of butter, worth \$4,500,000 in market. St. Albans, Vermont, ships 1,000,000 pounds of cheese and 2,750,000 pounds of butter, worth in market \$1,200,000. Wellington, Ohio, shipped 4,000,000 pounds of cheese in 1869, worth in New York \$1,000,000. A small district around Elgin, Illinois, produced in 1869, 1,300,000 pounds of cheese, 1,600,000 quarts of milk for Chicago market, and 200,000 pounds of butter, worth in Chicago \$420,000.

STATISTICS OF DAIRYING.

PROFITS OF DAIRYING.

From one hundred cheese factories in New York State, to which were attached 500,000 cows, the statistics show that the average value of milk produced from each cow was sixty-five dollars and fifty-nine cents; average value of each veal calf, ten dollars, making the average product of each cow, seventy-five dollars and fifty-nine cents. It cost nine dollars to each cow to manufacture this milk into cheese, so that the average net value of cheese and veal from each cow attached to the one hundred factories of New York, was sixty-six dollars and fifty-nine cents. In all the States where winter feeding is required, the average cost of wintering is fully twenty dollars, reducing the net earnings of each cow that much.

There is, however, in addition to the above values of milk, a considerable profit from the whey, which is fed to hogs, and the land is constantly increased in value instead of impoverished, as it is by grain raising.

THE CLIMATE REQUISITE

for both butter and cheese making is a medium one, avoiding both extremes of heat and cold. Such is the climate of all our plains and mountain valleys, as I have so often demonstrated. We have a thousand clear, cool running streams gushing from the snows of the Sierra Madre range, with low banks and swift currents, so that they can readily be carried into milk houses, and besides cooling the atmosphere in the hot days, furnishing power for churning. Ice can be put up as cheap, if not cheaper, than in any other country in the world. Our dry, gravelly soils, under the influence of our continued dry climate, give us the best cellars imaginable, the sides, without the cost of stone walls, drying and hardening like cement.

DAIRYING IN THE TRANS-MISSOURI COUNTRY.

Every stream of the trans-Missouri country is adapted to butter and cheese making. There is an unlimited market along the lines of our great railways, in our new settlements, in the great mining districts which are scattered in the Rocky mountains for one thousand miles north and south, and nine hundred miles east and west, and at all our military posts. Besides our home demand, we have a demand on the Pacific coast. New York and Ohio are annually furnishing large quantities of both butter and cheese to the Pacific slope. The dairy product of this country would add the transportation from

those States to its value here. Mr. E. H. Derby, of Boston, one of the statisticians of the Treasury Department, estimates that next year China and Japan will buy of us, if we have it, fifty thousand tons of butter and cheese. Fifty thousand tons amounts to 100,000,000 pounds, or, if all in cheese, to the cheese product of New York State with their twelve hundred cheese factories and 500,000 milch cows attached to them. From the sweet and nutritious character of our grasses, and from the cool, equable character of our climate, there is no reason to doubt that a first-class milch cow will produce as much butter and cheese as is produced by the same cow in the best pastures of New York, Vermont and Ohio. The two Platte rivers drain a country which furnishes more acres of pasturage than all New York State.

WHAT THE PLATTE BASIN MIGHT PRODUCE.

Twelve hundred cheese factories in the great Platte basin, with 500,000 milch cows, yielding sixty-six dollars and fifty-nine cents each, as they do in New York, would return to their owners, clear of all cost of manufacture, \$33,295,000. The city that could be the entrepot of such trade and traffic need not sit in sack cloth and ashes, sighing for the days when the construction of the Union Pacific Railroad disbursed two or three millions annually. Hutton & Alsop had four thousand cows that were kept alone to raise calves. Hundreds of people saw them in one herd last summer. Four thousand cows would have yielded them, at New York averages, clear of all labor, \$266,360. J. W. Iliff grazed, last summer, on Crow Creek, thirty-five hundred milch cows, which would have yielded, clear, \$233,065.

A cheese factory can manufacture the milk of six hundred cows. In the States they would net for the summer thirty-nine thousand nine hundred and fifty-four dollars; cost of wintering, at twenty dollars per head, twelve thousand dollars, leaving as the actual net profits twenty-seven thousand dollars. In this great winter grazing region the cost of wintering would not exceed one dollar per head, or six hundred dollars, leaving as the actual net profits thirty-nine thousand three hundred and fifty-four dollars, or a difference in favor of the plains of eleven thousand and four hundred dollars, on six hundred cows.

Here, then, is the widest field of industry to the emigrant of small means. Here are untold millions of acres of grazing the year around, where all the cows in America can graze. Here are a thousand mountain streams, affording cool water for tens of thousands of dairies. Here is the land, both grazing and timber, at government price, and the great continental railways to carry the dairy products, either east or west, to market.

And here, gentlemen of Omaha, Nebraska City, St. Joseph, Leavenworth, Kansas City, St. Louis and Chicago, from the necessity for supplying our rapidly increasing home demand as well as the unlimited foreign markets, will spring up an industry which will as surely overshadow the dairy interests of New York as does the lofty Sierra Madre Mountains overshadow the Catskills. Your duty is to build up this interest here; to point out the way to the dairy colonies; and you will gather the golden harvest which will follow.

LETTERS FROM DAIRYMEN.

To substantiate what I have asserted as to the adaptability of our grasses and climate to that branch of industry, I give you the following letters received by me from dairymen here:

THE EXPERIENCE OF MR. KETCHAM.

CHEYENNE, W. T., March 20, 1871.

DEAR SIR:

I have been engaged dairying near Cheyenne in the Crow Creek valley since the spring of 1868. I started by milking five cows, and carrying the milk on foot in a pail to my customers. I added more cows to my number, from time to time, as the profits allowed. By the fall of 1869, the second season, I was milking fifty-two cows—all bought from the business started by the first five cows. The season of 1870 I milked eighty-five cows. I have found that a good dairy cow will make as much butter or cheese from our wild grasses as in any country on tame grasses. Our cool climate is finely adapted to making both butter and cheese. I am now milking thirty-two cows which are not fed either hay or grain, but graze in the valley of Crow Creek, on the old dry grass. They give from thirty-six to forty gallons of milk per day. I shall add one hundred and twenty-five cows to my present number the coming season.

Respectfully yours,

FRANK KETCHAM.

MR. PENNOCK'S TESTIMONY.

CHEYENNE, March 21, 1871.

DR. LATHAM:

Dear Sir:—I have been engaged dairying near Cheyenne on a branch of Crow creek since the fall of 1867. That season I milked fifteen cows; the summer of 1868, thirty cows; the summer of 1869, thirty-five, and that of 1870, forty-five. We sell milk for the six months commencing April 1st at thirty cents per gallon. My cows averaged, during that time, one hundred and eight dollars worth of milk. For the other six months we sell milk at forty cents per gallon, and they average fully as much per head in value, or two hundred and sixteen dollars per head per year. In winter I stable and feed hay at night, and graze during the day. I have made butter and cheese on the Western Reserve in Ohio, and I know that a cow will give as much milk or make as much butter or cheese on our wild grasses as she would in the richest clover and blue grass pastures anywhere.

Very Truly Yours,

W. D. PENNOCK.

MR. SLOAN'S EXPERIENCE.

CHEYENNE, March 20, 1871.

DR. LATHAM:

Sir:—I have been a dairyman in Pennsylvania and Illinois, and also in Montana. I commenced the same business near Cheyenne in the early fall of 1867. In 1868 I milked twenty cows. The summer of 1869, thirty-eight; the summer of 1870, fifty. I have an extra lot of milch cows for this country, and they would be classed, in the old dairy States, as first-class. For the months of June, July and August they averaged eighteen quarts of milk daily. For the other nine months they averaged over two gallons. In the best part of the season they would make one and a half pounds of butter per head daily, and the whole year they would average one pound per day. From the same cow, after acclimation, I can make here more butter or cheese than can be made in the most noted dairy regions of America. Cows that are milked winters are fed on good bright hay; those that are not, graze for themselves and are in fine order in the spring, when the milking season commences.

Very respectfully yours,

M. SLOAN.

WHAT MR. FARRELL SAYS.

LARAMIE, W. T., March 19, 1871.

DEAR SIR:

I have been dairying at Laramie, on a branch of the Laramie river, for three seasons. I started in the spring of 1868 with twenty-five cows. I had increased that number in 1869, to forty, and in 1870, to sixty head. From that three years' experience I am sure that cows grazed on our grass do well, and will give as much milk the year

round as they will give anywhere. The milk is as rich as from any feed and will make as much butter and cheese. Cows keep up the quantity of their milk the whole year here as well as anywhere.

Respectfully yours,

E. FARRELL.

These men are so well known in Wyoming that what they say will be received here with implicit confidence. They all commenced poor, and now have three hundred American cattle, with good buildings, on their ranches, and horses, mules, oxen and sheep, and are now independent, and are on the sure road to wealth. But we do not rely alone on the experience of these gentlemen. There are hundreds of others who have had as much experience, and who speak as favorably of all the conditions of our soil, grasses, climate, water, etc., as these men do. With the above testimony I leave the matter with the emigrants who are swarming to our valleys, singly and in colonies, from every part of the world. They will prove equal to its development.

TEXAS CATTLE.

THE GREAT CATTLE RANCHES AND CATTLE PRINCES OF TEXAS—THE
MARKETS FOR THE SURPLUS CATTLE—SOUTHERN MARKETS—ABILENE,
SCHUYLER, AND THE NORTH-WESTERN TRADE.

 HERE are five great natural grazing regions in the world. The interior of Asia, on her high table lands, and the valleys of her lofty mountains, have furnished rich pasturage, summer and winter, since the time of Abel, "who was a keeper of sheep," and of Jabel, "who was the father of such as live in tents, and such as have cattle." This Asiatic grazing country is greater in area than all Europe.

The second pastoral country in point of age is South Africa. All the vast region lying south of the Kong Mountains and Mountains of the Moon in 10° north latitude to the Cape of Good Hope, in 35° south latitude, feeds immense herds of ganniverous animals the year round.

The interior of South America is the third great pasture ground. On her wide and boundless Pampas countless herds of animals graze.

The fourth region is Australia.

The fifth is our own trans-Missouri and Mississippi country.

TEXAS THE GREAT CATTLE GROUND.

Texas is truly the cattle hive of North America. While New York, with her 4,000,000 inhabitants, and her settlements two and a half centuries old, has 748,000 oxen and stock cattle; while Pennsylvania, with more than 3,000,000 people, has 721,000 cattle; while Ohio with 3,000,000 people, has 749,000 cattle; while Illinois, with 2,800,000 people, has 867,000 cattle; and while Iowa, with 1,200,000 people, has 686,000 cattle; Texas, and forty years of age, and with

CATTLE PRINCES OF TEXAS.

her 500,000 people, had 2,000,000 head of oxen and other cattle, exclusive of cows, in 1867, as shown by the returns of the county assessors. In 1870, allowing for the difference between the actual number of cattle owned and the number returned for taxation, there must be fully 3,000,000 head of beeves and stock cattle. This is exclusive of cows, which, at the same time, are reported at 600,000 head. In 1870 they must number 800,000, making a grand total of 3,800,000 head of cattle in Texas. One-fourth of these are beeves, one-fourth are cows, and the other two-fourths are yearlings and two-year olds. There would, therefore, be 950,000 beeves, 950,000 cows, and 1,900,000 young cattle. There are annually raised and branded 750,000 calves.

These cattle are raised on the great plains of Texas, which contain 152,000,000 acres.

WHERE THEY LIVE.

In the vast regions watered by the Rio Grande, Neuces, Gaudaloupe, San Antonio, Colorado, Leon, Brazos, Trinity, Sabine and Red rivers, these millions of cattle graze upon almost tropical growths of vegetation. They are owned by the ranchemen, who own from one thousand to seventy-five thousand each.

GREAT RANCHES.

I will describe one or two of these great ranches, which will represent to your readers the large ranches of this cattle hive. On the Santa Catrutos river is the ranche of Col. Richard King, known as the "Santa Catrutos Ranche." This ranche consists of nineteen Spanish leagues of land, or eighty-four thousand one hundred and thirty-two acres. It is watered plentifully by the Santa Catrutos river and its tributaries. On this ranche are the immense number of sixty-five thousand cattle, ten thousand horses, seven thousand sheep and eight thousand goats. One thousand saddle horses and three hundred Mexicans are constantly employed in herding, gathering and driving this stock.

Col. King brands annually twelve thousand calves and sells ten thousand beef cattle yearly, and invests the proceeds in stock cattle, thereby adding to his vast herds, in addition to their natural increase.

O'CONNOR'S RANCHE,

twenty miles below Goliad, on the San Antonio river, is another princely estate. He had forty thousand cattle in 1862 and branded

eleven thousand seven hundred and seventy-two calves, and was selling from seventy-five thousand to eighty thousand dollars worth of cattle annually. The foundations for this wealth were laid in 1852, when he commenced grazing with fifteen hundred cattle.

THE ROBIDEAUX RANCHE,

on the Gulf, between the mouths of the Rio Grande and the Neuces, owned by Mr. Kennedy, contains 142,840 acres. It is a fertile peninsula jutting out into the gulf and is fenced on three sides by the waters of the gulf. The other side is fenced by thirty miles of plank fence; every three miles of this fence has a little ranche for Mexican herders. In this enclosure are thirty thousand beef cattle alone, besides the other stock. These three are types of the men in the older cattle growing region near the gulf.

The frontier counties are all rich in stock; Jack Young, Throgmorton, Stevens, Callahan, Coleman, Brown, Torrent, Elrath, Comanche, Palopinto, Hitt and Johnson are all great stock counties. These counties comprise the country drained by the thousands of streams that form the Rio Grande, Neuces, Guadalupe, San Antonio, Colorado, Leon, Brazos, Trinity, Sabine and Red rivers, and is one of the best watered regions in America. The bluffs and table lands bordering and between these streams are covered with "bunch," "buffalo," and mesquit grasses.

THE CATTLE PRINCES

of these counties are Jno. Hittson, who has fifty thousand cattle; William Hittson, who has eight thousand head; George Beavers, six thousand; Charles Rivers, ten thousand; James Brown, fifteen thousand; C. J. Johnson, eight thousand; S. E. Jackson, four thousand; Robert Sloan, twelve thousand (half Durham stock); Anderson Brothers, six thousand; Coggins & Parks, twenty thousand; Samuel Vaughn, six thousand; Martin Childers, ten thousand; Cunningham, eight thousand; Manskaw, eight thousand; Lacy & Coleman, twelve thousand; John Chisholm, thirty thousand.

JACK HITTSON.

John Hittson's ranche is in Palo Pinto county, on the Brazos river, where he has fifty thousand cattle; he has three hundred saddle horses and fifty herders. He drives about ten thousand head of cattle north annually. Eighteen years ago he was working from day-

light till dark in Rust county, Texas, a timbered section, felling trees, cutting, rolling and burning logs, and clearing the lands to raise a little corn and wheat. From experience in the forests of Texas, he knew that it would take the three score and ten years of a natural life to clear away the trees and wear out the stumps, and not fancying the doom of hard labor for life, he sold his land and with sixty Texan cows and nine brood mares turned his face toward the setting sun and the grass regions of the Brazos. Less than a score of years have passed and he has fifty thousand head of cattle and as many acres of land. Hittson is about forty years old, six feet in height, and broad-shouldered. Has an honest, sunburnt face, with a square, firm-set under jaw, which as I looked at it, I thought was shut a little firmer, giving him a more determined look than it would otherwise, but for a dozen or two encounters with the fierce and unsatiable Comanches, who knew Hittson and his old long muzzle loading rifle well, and now know him with his Winchester. I have often wondered what they thought when they pounced on him with his new Winchester, and received ten shots in a minute instead of one in five minutes. They must have thought the old rifle bewitched. At any rate, they will give him a wide berth, unless they creep upon him as the hunter does upon the buffalo bull he does not dare to face. Mr. Hittson is establishing a ranche on the South Platte, near old Fort Morgan, for use as his general northern headquarters. He will winter five thousand cattle there this year, and bring ten thousand head there for sale next season.

John Chisholm, on the Concho river, is another of the cattle raisers and drivers of North-western Texas, who carries on the business on a princely scale, and whose experience is much like that of Hittson.

Of the thousands of owners of the 3,800,000 head of cattle in Texas, not one hundred commenced with large means. They have built themselves up from small beginnings, like Hittson and Chisholm.

MARKETS.

The surplus stock is disposed of by packing, by shipping by steamer to the gulf States, by driving due north to Abilene, Kansas, and Schnyler, Nebraska, and by the North-western route to the Pecos river, where the droves divide, some going to Arizona and Califor-

nia by the southern route, the greater number, however, keeping a northern course up the Pecos river, to the Arkansas river, crossing at and above Bent's old fort, and thence along the eastern base of the mountains, through Colorado and across the Black Hills to the Union Pacific railroad, and on to the great valleys and markets of Wyoming, Utah, Montana, Idaho, Nevada and the Pacific States.

DROVERS OF THE NORTH-WESTERN TRADE.

The Parties engaged in this trade are: John Hittson, who has driven seven thousand cattle this season; John Chisholm, six thousand; Frank Turkursley, fifteen hundred; McKidrick, fifteen hundred; Stephen Johns, two thousand; W. A. & W. P. Black, fifteen hundred; James Hart, eleven hundred; Wilson, eight hundred; J. B. Henderson, sixteen hundred; Wm. Forsythe, fifteen hundred; C. C. Campbell, three thousand; Henry Martin, one thousand; Robert Wyte, fifteen hundred; Samuel Goldstone, fifteen hundred; John Anderson, fifteen hundred; James Patterson, eight thousand; George F. Reynolds, five thousand and five hundred; Charles Goodnight, five thousand, and Martin Cavin, twelve hundred. It is estimated by Texas drovers, who have had fine opportunities to judge, that 100,000 cattle have been driven from Texas on this route during the season of 1870. Of this number Montana has taken twenty thousand; Wyoming, eight thousand; Utah, eight thousand; Idaho, eleven thousand; Nevada, seven thousand, and California, ten thousand; the other thirty-six thousand have been sold in New Mexico and Colorado—principally in Colorado.

The beeves are selected out before the herds leave the Black Hills west. If fat they are at once shipped for Chicago and New York; if thin they are left in the valleys of Colorado, Wyoming and Nebraska to fatten.

The amount of money handled by bankers along the base of the mountains from Cheyenne to Trinidad, is enormous. I have no data from which to calculate the amount, but it cannot be less than \$1,250,000. Every settler who comes into any of these mountain territories, every mine that is opened, every Indian who goes on to reserves and is fed, every soldier who is brought into the country, creates an additional demand for stock cattle and beef. As astounding as the figures may seem, the supply has not been nearly adequate to meet the demand.

Great preparations are being made in north-western Texas to gather together herds which in numbers have not been heard of before.

ABILENE AND SCHUYLER.

Abilene has been the great market this year. At that place the receipts of cattle have reached the enormous figures of 200,000 head. The shipments for the month of September amounted to sixty thousand head, or three thousand and three hundred and thirty-three car loads, or one hundred and eleven car loads per day, for the great corn fields of Iowa, Missouri and Illinois. It is anticipated that the shipments will reach seventy-five thousand in October.

This great cattle trade at Abilene, which has assumed such gigantic proportions, was initiated in 1867, and has therefore counted only four seasons. In 1867 seventy-five thousand head of stock were received; in 1868, 125,000; in 1869, 150,000; in 1870, 200,000. In 1869 one bank alone in Kansas City handled \$3,000,000 cattle money. The cattle driven and sold here are from the eastern part of the State, from the Rio Grande to the Red river.

AT SCHUYLER,

this year, which was an experiment only, twenty-seven thousand cattle were sold. The First National Bank of Omaha handled \$500,000 in consequence of this cattle business. I am informed by those who know, that forty thousand more cattle could have been sold if they had been at Schuyler. Next year it is hoped the supply will reach 100,000, as the demand for Nebraska, Iowa, south-western Minnesota and Dakota will certainly require that number.

PACKING

is one of the great means of disposing of the cattle of Texas. Allen & Poole, of Galveston, are packing immense numbers of cattle at Galveston, Indianola, and at Shreveport and other places. I am informed that they own more cattle than any other firm in the State. This salted beef finds market in our great eastern cities, with our navy and merchant marine, and in every beef-buying market of Europe.

REFRIGERATOR CARS

are looked forward to anxiously to take the place of live shipments as cheaper, healthier, and with no loss by long travel without food. If such shipments prove successful, every market east of the Mis-

souri river and west of the Sierra Nevadas will receive beef from Texas.

Such is the colossal cattle raising, driving and shipping in and from Texas, built up where there were no markets, and no railroads to stimulate it. What may we expect it to be now that there is a demand for it in every valley and on every prairie west of the Allegheny mountains, and in every beef-buying market in the Atlantic States?

SHEEP AND WOOL.

THE WORLD'S WOOL—THE TRUE HOME OF THE SHEEP—PROFITS OF WOOL
GROWING—ADAPTATION OF THE MOUNTAIN REGIONS TO SHEEP RAIS-
ING—IMPORTANT LETTER FROM JUDGE KINGMAN.

PERHAPS there is no other branch of American industry deserving so much attention as sheep and wool growing. It is deserving of it because in all countries and in all ages flocks answered the first necessities of man, yielding both food and clothing, because everywhere, whether fed from valley, plain or hillside, they have yielded a golden harvest.

So sure and certain has been the golden return that the accounts of oriental countries denominated the sheep the "Golden Hoof." In later ages the Spaniards found the growing of sheep and wool so profitable that it became a proverb, that "whatever the foot of the sheep touches turns to gold."

WOOL.

In the present age wool, and the textures manufactured from it, stands above competition, either in the immense values invested in them, or in its contributions to man's wants and luxuries. A writer says of the Paris Exposition: "The emotion most vividly excited by a general survey of the products of the world's industries, was admiration of the wonderful qualities of *that fibre* which is capable of producing objects and fabrics infinitely surpassing in variety and appearance, as well as of application, those produced from any other material, thus showing itself to be, of all fibrous materials, that of the first necessity to man." (This fibre, we observe, is made more perfect than any other by the chemical elaborations of an animal of high organization, thus surpassing silk, which is derived from an animal

of a lower organic structure. Its specific gravity being the least of all fibrous substances, its tissues are the lightest, warmest and most healthful; such are the qualities of fibre, which have led every industrious nation to the culture of flocks as the first necessity of its people, which have caused, in every manufacturing nation, the demand to constantly exceed the supply, which have transplanted colonies from the Cape of Good Hope to Australia, and have carried the shepherd emigrant to the Steppes of Russia and the plains of La Plata. Such qualities, and the necessities of man, have made the

WOOL PRODUCTION OF VARIOUS NATIONS

reach such enormous figures as the following :

Great Britain has an annual production of 280,000,000 pounds; Germany, 200,000,000 pounds; France, 123,000,000 pounds; Spain, Italy and Portugal, 119,000,000 pounds; European Russia, 125,000,000 pounds—making in Europe 827,000,000 pounds as her annual production. In Australia, South America and South Africa, 25,000,000 pounds; in the United States, 100,000,000 pounds; North American provinces, 10,000,000 pounds; Asia, 470,000,000 pounds; North Africa, 49,000,000 pounds—the whole wool product of the world reaching the enormous grand total of

ONE BILLION AND SEVEN HUNDRED AND THREE MILLION POUNDS.

In consideration of such figures, no one will deny that wool and sheep-growing should take first rank among our domestic industries. It deserves more marked attention than it receives, from the fact that, of all productions of the temperate climate, it is the only one that we are dependent for our supplies upon foreign countries.

WOOL PRODUCT OF THE UNITED STATES FOR 1870.

In 1870 our wool product was 100,000,000 pounds, valued at \$38,000,000. For the fiscal year ending June 30, 1870, we imported of wool and its fabrics to the value of \$42,229,385; while 10,000,000 people in the north-west are working early and late to raise grain, which is to be shipped for foreign markets, the profits of which, after paying for thousands of miles of expensive transportation, barely pays the producer day wages, they buy clothing manufactured in England, France or Prussia, from wool grown in South Africa, Australia, or the Argentine Confederation. For the year ending June 30, 1869, we exported \$82,238,773 worth of breadstuffs,

which cost three-fifths of it to get it to the seaboard. For the same year we exported only \$315,881 worth of wool and its manufactured textures. As some one remarks, "Not one-half enough to pay for our imported playing cards."

INCREASE IN WEALTH AND POPULATION OF FOREIGN COUNTRIES FROM WOOL GROWING.

In the immense increase in wealth and population which the growing of wool and its fabricature has caused in other countries, it is entitled to our first consideration. I will only instance the following: "Roubaix, in France, from a population of five thousand souls, has increased to fifty-five thousand. Its production of fabrics has risen from three thousand pieces to over 400,000 pieces." "In Rheims, in 1801, an obscure workman made from the long, soft wool of the Rambouillet sheep, the most unrivaled of modern textures—the French Merino." From that beginning, in 1863 the value of fabrics produced had risen to 80,000,000 francs. There were nineteen thousand hand looms, occupying thirty-eight thousand workmen, and there were 170,000 spindles. The whole number of workmen directly employed was fifty-five thousand.

Bedarioux, from an obscure hamlet, annually sends 250,000 pieces of cap cloth to Paris, and employs thousands of workmen. Elbeuf, from like obscurity, employs twenty-four thousand workmen.

IN BELGIUM

the town of Verviers, which had only five thousand people, through its woollen manufacturies has forty thousand people. In 1864 the value of her production was 70,000,000 francs. Aix la Chapelle, one of the centers of card-wool industry, annually produces 2,875,000 yards of cloth.

IN ENGLAND,

in the West Riding of the county of York, from a population of fifty-nine thousand it has increased to 1,375,000. Halifax, in the same district, has increased from sixty-three thousand to 130,000. Huddensfield from fourteen thousand to thirty-eight thousand; Leeds, from fifty-three thousand to 152,000. Bradford, the seat of the great worsted industry, has increased from fourteen thousand to 100,000. The foundation of this colossal industry was commenced by a royal edict, in favor of the city of York, reciting, "that the poor of that city were daily employed in spinning, dying, carding,

weaving, etc., for the making of coverlets, and *that the same have not been made in the country till of late*, and therefore none shall make coverlets but the people of York." A writer remarks: "We thus see this wretched handicraft now expanded into the most magnificent manufacture to be found in the industry of the world."

"Not guarded Colchis gave admiring Greece
So rich a treasure in its golden fleece."

WHERE SHEEP ARE RAISED.

Sheep flourish and are profitable in almost every variety of climate, on all kinds of soil, in all latitudes, and at all altitudes. This is evidenced from the fact that the following countries raised wool for exportation to this country in 1870: England, Scotland, Dominion of Canada, all other British possessions in America, British West Indies, British Africa, British East Indies, Australia, Cuba, Hamburg, Bremen, France, Brazil, China, Argentine Republic, Dutch West Indies and Guiana, Mexico, Italy, Venezuela, Belgium, United States of Columbia, Uruguay, Russia on the Baltic and White seas, Russia on the Black Sea, Chili, Denmark, Danish West Indies, Austria and Turkey—countries embracing every known temperature, rain and snow fall, and every character of soil, from the marshy lands of Holland, many feet below the sea, to the high Steppes of Asia; between the lofty Himalayas, fifteen thousand feet above the sea; from countries under the equator to 67° north of it. Thus we see how readily the sheep adapts itself to such a variety of circumstances. In Holland and Belgium, on the coarse, watery herbage of their lowlands, the flock yields the same long, silken, fleecy fibre that he does on the shorter, dryer and sweeter grazing of the hills of Moravia and England. The fine wool of the Paulac, Infantado, Rambouillet and Megritte, families of the Merino, is grown in Spain, France, Algeria, Cape Colony, on the La Plata and in Australia alike. It is true that they adapt themselves to all these varying circumstances offered, and climate, but they are acquired habits.

THE TRUE HOME OF THE SHEEP

is on the hills, mountain sides and on the elevated plains and table lands of the interior of continents. Covered as they are with a natural covering against cold, their especial dislike is rain and moist soils. They flourish best on the slopes of the lofty ridges or ranges

THE TRUE HOME OF THE SHEEP.

of mountains, where the soils are from the wear and washes of the rocks of these great upheavals, giving them light, porous, gravelly soils, through which any excess of moisture leaches away.

The first history of sheep was in the interior of Asia, at altitudes fully as high as the interior of our own continent.

In the low lands the herbage is coarser and better adapted for animals which are not of so fine an organization as sheep. Countries of heavy rain fall keep the covering of the sheep saturated with water which is not conducive to health or the production of large quantities or fine qualities of wool.

THE TABLE LANDS OF AUSTRALIA.

The center of Australia is a high table land with a small rain fall, and there the finest fibre is grown that the Merino sheep is capable of producing. From that source comes the great bulk of wool from which is made the fine "French broadcloths" and "French Merinos." It is sold in special markets in London, and it attracts buyers from all the manufacturing centres of the world. The physical conformation of New Zealand is much the same as Australia, the climate is materially the same. There, in a few years, they have developed the production of the best fibres for delaines. On the great

PAMPAS OF SOUTH AMERICA,

which are high, diluvial plains, comparatively dry the whole year, and entirely so ten months of the year—they export 100,000,000 pounds of fine fibre which is eagerly taken for "clothing fabrics." They have developed the growth of the celebrated "Mestiza" wool, the supply of which is not equal to one-twentieth of the demand.

AFRICA.

In the interior of Africa, when the colonists had found that the climate was too dry for farming, their attention was turned to wool-growing, and from the scanty herbage growing there, and from a barren waste with a few naked Caffres, it has taken front rank with the producing countries of the best wool.

ASIA.

The great arid interior of Asia is the favorite home of the sheep and goat. From the condition of most of her people in the scale of civilization, it is noted more for the enormous quantity of the production than its fine quality.

IN THE UNITED STATES.

All the country lying west of the Missouri and Mississippi rivers is of that high, dry, rolling character which is so favorable for the growth of the healthiest sheep and the most valuable fibres of wool. In this connection I will submit to your readers a most complete and comprehensive letter of Judge J. W. Kingman, of our Territorial Supreme Court :

LETTER FROM JUDGE KINGMAN.

LARAMIE CITY, November 21, 1870.

H. LATHAM, M. D.:

Dear Sir:—Your favor of a recent date, asking the result of my observations, on the Rocky Mountain portion of our country, in its adaptation to sheep raising, is received. I hasten to reply.

It will be remembered that the natural habitat of the sheep, as well as of the goat and the antelope, is an elevated, mountainous region. They are provided with an external covering, and a constitutional system fitting them to endure its rigors, and subsist on its peculiar herbage. They may be removed to other regions, it is true, and by careful husbandry, made to flourish in hot climates, on artificial or cultivated food, and even in rainy and muddy localities. But the multiplied diseases to which they are subjected are convincing proofs that they are exposed to influences unnatural and uncongenial to their constitutions. They require a dry, gravelly soil ; a clear, bracing, cool atmosphere ; a variety of short, nutritious grasses ; and they love to browse on highly aromatic plants and shrubs, like the willow, the birch, the hemlock and the artemisia. In such circumstances they are always healthy, vigorous and active ; and produce the maximum of even-fibred wool, and the best of high-flavored meat.

That we have here millions of acres, answering in all respects to the exact requirements for the best development of sheep, in the production of both wool and meat, is demonstrated by the countless numbers of antelope that annually swarm over the country, and seem to have no limit to their increase, but their natural enemies, the wolves and the hunters. They are always in good condition, healthy, fat and active ; and this is particularly noticeable in the winter and spring, when it might be supposed they would be reduced by cold and want of food.

It is well understood by wool growers that the great difficulty in producing a staple of uniform evenness and uniform curve, is the variable condition of the sheep at different seasons of the year. The animal organization cannot produce the same quality of growth in extreme cold weather, on dry hay, that it will produce in warm weather on fresh grass. The result is that the best quality of wool cannot be grown where the sheep are exposed to extremes of climate, and particularly where they cannot be kept in uniform good health and condition. If this is true in the growth of wool, it needs no argument to prove that it is true also in the production of wholesome and nutritious meat. A

generous diet of rich and various food is required to keep up a rapid and constant growth, and it is quick growth, combined with good health, that makes the choicest meat.

I have been familiar with sheep raising in New England for many years, and although sheep do pretty well on the rocky hills there, yet they are subject to a frightfully long list of diseases, every one of which, however, is ascribed to local, and not inherent causes. The one great cause, exceeding all others in the variety and extent of its evils, is the long continued rainy weather. The ground gets saturated with water; the feet become soft and tender with the soaking, and foot disease is propagated by inoculation with surprising rapidity. The fleece gets wet, and remaining so for several days, keeps the animal enveloped in a steam bath; this produces pustules, scab, tetter and other cutaneous diseases; everything and every place is soaked and dripping with water, during those long storms, and the sheep are compelled to lie on the wet ground and contract colic, scours and stretches and other bowel diseases. But here on our hard, porous, gravelly soil, in a bright, equable climate, with a dry, bracing atmosphere, having abundance of nutritious grasses and a great variety of desirable food, the flocks will find every circumstance contributing to their perfect growth and development. This is such a country and climate as they naturally inhabit. Their constitutions are fitted to its peculiarities, and will produce here their highest possibilities.

There is no doubt that any breed of sheep will do well here, but for various reasons I would advise the introduction of the best qualities of mutton sheep in preference to the fine woolled animals. In the first place, they are hardier and more prolific, and will undoubtedly improve faster; and in the second place, while it is possible to overstock the market with wool by importation from foreign countries it is not possible to overstock the meat market. We have now 40,000,000 of people, and the annual increase is about 3,000,000; our people are all meat eaters, the price of meat in our large cities is enormously high, and the annual production by no means keeps pace with the demand for consumption. But in addition to all this, the actual return in wool, from a flock of medium-wooled sheep, will nearly equal in value the net product of a fine woolled flock. They produce heavier fleeces, and the price of the wool bears a better ratio to its cost.

Most of our flock masters are purchasing the sheep flocks of New Mexico and the extreme Western States, with the expectation of getting good animals by crossing. This may be done, it is true; but I do not think it likely to result satisfactorily. It requires too much care, and judicious selection, as well as long continued effort, to get rid of bad qualities and fix permanently good ones. We can get sheep by going further east, which have been carefully improved for fifty years; and in which the characteristics have been developed by a scientific breeding which we may not hope to equal. Such a flock will cost more to start with, and will be worth more; but may not have cost more, all things considered, after a few years.

Very respectfully yours,

J. W. KINGMAN.

ADAPTABILITY OF THE TRANS-MISSOURI COUNTRY FOR SHEEP RAISING.

All of the trans-Missouri country, west of the ninety-eighth Meridian, to the crest of the Snowy Range, has less than six weeks of rainy season, which is in the month of May, after the cold weather. Usually there is no rain fall after November till May. The snow is dry and round and does not adhere to the sheep. There is not an acre of all the billion of acres of country that does not furnish summer and winter grazing for sheep. There is winter grazing enough in Colorado, Wyoming and Montana to graze all the sheep in the United States, Australia and the Argentine Republic, the aggregate of whose wool product is 300,000,000 pounds, worth \$100,000,000.

There is plenty of water for countless flocks in the network of streams that drain our mountain ranges of their snows.

ENTIRE ABSENCE OF DISEASE.

There is an entire absence of the marshy lands and wet soils so destructive to sheep in the form of "foot ail." The sheep in New Mexico, Colorado and Utah, have not, after ten years in the two latter Territories and forty years experience in the former, developed any local diseases. The universal testimony has been in all our Territories and States west of the Missouri river that there have been no diseases among the flocks, and that they have improved in the quality and quantity of the fleece.

PROFITS OF WOOL GROWING.

The great fact of winter grazing will enable our flock masters to make wool growing exceedingly remunerative. In many instances which have come under my own observation here on the Plains, flocks have yielded one hundred per cent. annually upon the investment in them.

In countries where either the natural resources or protection makes wool growing profitable, it makes most wonderful advancement. The wool industry of South America, South Africa and Australia does not date back more than a quarter of a century—and now they export 250,000,000 pounds. Iowa, in 1859, had 258,228 sheep; in 1869 she had 2,332,241.

There are many remarkable instances of rapid increase in wool growing, but there is nothing that shows how rapidly the product can be increased, and how wonderfully the demand increases, so much

as the figures of England's importation thirty years ago—then seventy-four thousand bales were imported from Germany, ten thousand bales from Spain and Portugal; British colonies, eight thousand bales; other places, five thousand; total, ninety-eight thousand bales. In 1864 there were imported from Australia 302,000 bales; Cape of Good Hope, sixty-eight thousand bales; South America ninety-nine thousand bales; and 219,336 bales from other sources—in all, 688,336 bales. Australia now supplies more than three times the whole amount of foreign wool consumed in England thirty years ago, and the production of South America exceeds the whole consumption then.

THE FUTURE OF THE WOOL INTEREST OF THE NORTH-WEST.

With such a sheep and wool growing country as we have here, "endless, gateless and boundless;" with such a great and increasing home and foreign demand; with such examples of rapid increase in sheep and wool productions, who shall doubt that in twenty years we shall rival Australia and South America in not only the quantity but quality of their wools, and that the wool buyers from all the great manufacturing centers of the world will visit our plains and valleys in search of the "fibre" susceptible of such wonderful and varied uses, and that with our wool production there will spring up manufacturing centers here that shall rival Bradford, Huddersfield, Halifax and Leeds, in England, and Rheims, Elbeuf and Roubaix, in France, in the magnitude and beauty of their fabrics?

Along the whole length of the Union Pacific railway, along the Central Pacific railway, along the Kansas Pacific railway, in the valleys of the thousands of streams bordered with timber for buildings and fences, there are untold millions of acres of luxuriant grazing lands, where sheep can be put down from New Mexico, Iowa, Illinois, Missouri, and other States, for two dollars per head. Shepherds can be hired from thirty to forty dollars per month that can readily herd three thousand head. Thousands of tons of hay can be cut on all our streams.

RATES OF FREIGHT TO EASTERN MARKETS.

Wool has been carried by rail from San Francisco to Boston for one dollar and ten cents per one hundred pounds. Double decked sheep-cars, carrying two hundred sheep, can be had from the base of the mountains to Chicago markets, for one hundred and fifty dollars,

thereby putting down fat wethers in market for seventy-five cents per head. Dressed mutton carcasses are delivered from the Rocky mountains in New York, for one dollar and seventy-five cents per hundred, car load rates.

If our trans-Missouri sheep and wool-growing interest makes as much headway in 1871 as the cattle interest did in 1870, there will be 1,000,000 sheep along the Union Pacific railroad, between North Platte and Ogden, at the end of next year.

ARTICLE NUMBER VI.

PORTIONS OF THE TRANS-MISSOURI PASTORAL LANDS DESCRIBED IN
DETAIL—WHERE FLOCKS OF THE EAST SHOULD BE TAKEN—UNE-
QUALED ADVANTAGES OF CLIMATE, SUMMER AND WINTER GRAZ-
ING, WATER AND RAILROAD FACILITIES—DISEASE ERADICATED
IN ONE SEASON, ETC., ETC.

IN my former article on sheep and wool-growing in the trans-Missouri country, I aimed to give the general statistics of wool-growing, its favored localities, its sure and profitable return, its necessity to our national industry, its susceptibility of great and rapid development, and the general adaptability of this country to its development to its highest possibilities, inasmuch that our choice fibres would be sought for by the manufacturers of the choicest fabrics of the world.

WHERE THE FLOCK-MASTERS OF THE EAST SHOULD TAKE THEIR SHEEP.

In this article I wish to point the flock-masters of Iowa, Missouri, Illinois, Indiana and Ohio, and all the other States of great rain fall and low lands, to the localities where they can take their flocks to cheap lands, to a cool, dry and equable climate, to high, porous, gravelly soils, and to grazing that is perennial.

For the present the most desirable localities are those along the great railroad lines, as railways furnish the means of cheap transit to markets for wool and mutton.

ALONG THE UNION PACIFIC RAILROAD.

The Union Pacific railway from Omaha to Sherman, its highest point, passes up a gradual plane, forming the interior table-land of the continent. It is all, both to the north and south of the railway, a vast grassy plain. At Julesburg station you are on a table-land three thousand and eight hundred feet above tide; and so on, as you

approach the mountains the plateau is higher and the soil less sandy and more gravelly and porous.

LODGE POLE CREEK,

a tributary of the South Platte, waters the country in the immediate vicinity of the railroad for one hundred and ninety miles. Here are at least one million acres of land furnishing short, sweet vegetation of great variety, comprising many aromatic plants, principal among which is the artemesia, or sage family, which, on the plains, has eight to ten varieties. The bottom lands of this stream furnish hay for any number of sheep, as they only require hay during storms. This million acres would furnish summer and winter pasturage to 1,000,000 sheep, which would yield annually 4,000,000 pounds of wool, worth, at the present low prices, \$1,200,000. North of this stream, along the eastern base of the Black Hills, is

HORSE CREEK,

which is about five thousand feet above the level of the sea, directly north from Cheyenne. Where it empties into the Platte it is not more than four thousand and four hundred feet high. This stream has, as tributary, Bear creek, forty miles long, which takes rise from Bear lake, and has beautiful groves of cottonwood and box-elder on its banks. It has fine bottoms, with luxuriant grass for hay, bordered by uplands with the best of grazing.

This stream and Horse creek aggregate one hundred miles of length, giving 640,000 acres of grazing, where a half million of sheep could graze the year round.

LARREN'S FORK

is another stream watering a splendid grass country. It is sixty miles long, and has plenty of hay, bluff grazing and timber.

Fox creek rises out of the solid rock in White bluffs, and runs to the Platte and is thirty miles long.

BOX-ELDER AND DEER CREEKS

are two more tributaries of the North Platte, respectively twenty-five and forty miles long. They take their rise in the bluffs, which are covered with pine, furnishing fine fencing and building material. They also have cottonwood, aspen and box-elder timber on the borders of the streams.

CHUG WATER,

with its north, middle and south forks, and Richard creek, Wolf creek, Spring and Willow creeks, as tributaries, aggregates two hundred miles of clear, running streams, taking their rise in the timbers

on the Black Hills, and have wide, rich and fertile bottoms. The next stream north is Sabelle creek, forty miles long.

A SHEEP PARADISE.

BIG LARAMIE,

east of Black Hills, comes next, with several tributaries. The bottoms here are five miles wide, covered with tall grass and soft timber. This is pronounced by those best acquainted, a sheep paradise. This country which I have described contains 6,400,000 acres, with rich, fertile bottom lands, plenty of timber and clear, crystal water, and just that kind and variety of herbage which sheep love, and which gives the meat that highly flavored gamy taste so much desired in mutton, and which, with the equable non-humid character of the climate, is conducive to the growth of the choicest fibres of wool.

A SHEEP PARADISE.

This 6,400,000 acres of land would give ample pasturage to as many sheep, or to all the sheep in the great State of Ohio, which annually produces 24,000,000 pounds of wool, valued at \$8,000,000. It would also produce annually 500,000 mutton sheep, worth in market \$2,500,000.

CHEYENNE THE ENTREPOT FOR THIS SECTION.

This country is all of easy access to the Union Pacific railway at Cheyenne, where the wool and mutton would be shipped to market. What would be the effect upon that town to be the entrepot for the trade incident upon the growing and shipping of 24,000,000 pounds of wool, such as is used in making the lustrous black broadcloths and French Merinos, or the growing of an equal amount of the long silken, floss-like combing wools of England, and the shipment of 500,000 mutton sheep to market? What would be the effect upon our railways and cities farther east, and upon our manufacturers to have built up a score or two of such industries? Yet, visionary as it may seem, it will be done in the next twenty years.

THE HOME OF THE ANGORA GOAT.

I have been impressed with the similarity of climate in this region to that of the valley of Angora, where the celebrated dazzling white goat, whose fleece is unrivaled for its brilliancy, elasticity, softness and lustre is raised.

A celebrated Russian traveler describes this country in the following words: "Abundant pasturage is found for the goats after the frosts, when the fresh warm rains revive the vegetation. The shearing is hardly concluded, when the vegetation called forth by the warm rains is arrested, and receives no moisture from the dews, persons lying at night in the open air finding no humidity in the morning on their garments. This dryness, however, gives to the vegetation which furnishes the only aliment to flocks during the summer, an aromatic character which makes it peculiarly digestible and stimulating. The goats eat nothing except the young shoots of vegeta-

tion and herbs, and perhaps it is this which contributes to the consummation of the beauty of their fleece, which is lost when they change their climate and pasture."

There is the same similarity in the geological formation of the soil. The valleys of Angora are the slopes of great mountain uplands, and composed of feldspathic rocks, which have moved and crumbled away, making just such a soil as abounds on both slopes of the Black Hills.

Certain it is that these animals flourish best at high altitudes, on short, sweet grasses and aromatic herbs, and in a dry climate, just like this Black Hills region. Therefore, we may conclude that the sheep, so closely allied to the goat in its constitutional traits, habits, etc., will flourish equally as well here between the railway and the North Platte.

COLORADO

has had much experience in wool-growing, and that experience has been followed by the most successful results. During the recent Territorial Fair I conversed with more than a hundred wool-growers, from all parts of the territory, and they all testified that the sheep were healthy—that they increased in the quality as well as in the quantity of the wool. The wool-growers are also unanimous in their praise of the evenness of the fibre. In Wyoming there have been large flocks for some years. Creighton & Hutton have about six thousand head; Creighton & Alsop have about the same number. Carter & Co. were sheep and wool-growers for several years on the plains. Moore Bros., at Cheyenne and Sidney, on the Union Pacific railroad, and J. W. Iliff, Cheyenne, have owned and grazed large flocks of sheep.

Mr. J. A. Moore tells me that he has eleven hundred head, including lambs—that they are the ordinary mixed breed sheep of Missouri—that they have improved in their wool materially since being taken to the table-lands and mountains—that he has received one or two diplomas from wool-growing associations for the "quality and large aggregate quantity" of the clip.

DISEASE ERADICATED.

More or less disease prevails among the sheep in the Mississippi valley, and when sheep flocks are brought from those States they bring their diseases with them. As these diseases are produced by an unfavorable and unhealthy climate, they are cured by a healthy and favorable one. Our dry, cool climate cures the scab, and our dry, porous soils cure the foot rot. In all cases one season has been sufficient to eradicate every trace of disease.

In my next article I will treat of the manner and cost of keeping sheep in our perennial pastures, as compared with eastern States.

ARTICLE NO. VII.

SHEEP HUSBANDRY IN WYOMING, NEW MEXICO AND COLORADO—
LETTERS FROM SENATORS CONKLING AND THAYER, AND REPRESENTATIVES LAWRENCE, HOOPER, KELLEY, HON. J. B. CHAFFEE, AND OTHERS—WOOL-GROWING IN SOUTH AMERICA, AUSTRALIA, RUSSIA AND WYOMING COMPARED.



PON my own and others' authority I have written several articles to you of the wool-growing capabilities of our trans-Missouri country, and now I come to you with some of the best known names in this country, who endorse fully all that I have said. In new enterprises in this country where we have no precedents, our American people are slow to believe. In order that your readers may judge of our future in this branch of industry, I will here quote what is said of the pastoral lands of Australia and the La Plata, and of the flocks and herds which graze there, and will, for the benefit of all doubters, show what enormous wealth has flowed into the lap of their cities, which have controlled the pastoral trade of those countries.

On Page sixty-seven of the last annual CYCLOPEDIA, the editor says that "in 1868 Australia exported 30,000,000 pounds sterling worth of wool," (or \$150,000,000 worth in gold.) There are several cities of great population and wealth which divide this trade. Melbourne, the chief of them, had, in 1868, 170,000 population, and a trade greater than Boston, or New Orleans, or Baltimore, or San Francisco, and the cream of this trade, although Australia has rich gold mines, and incomparable tropical agriculture, is from the products of her flocks and herds.

On page 288 of Agricultural Report of 1864, Dr. Kenworthy says: "The quality of the land, or the pooriness of the pasture, does not prevent the successful production of wool; for where there is *anything* to eat *sheep* live, *increase* and *produce the useful staple*.

Locations without water, and with little or no herbage in summer, are utilized in winter. In some portions of Australia there are vast

treeless plains. These are stocked with fine bred and healthy sheep. With regard to the pasture in Australia, I can only say that in a few favored localities surrounding extinct volcanoes it is good, the natural grasses being fine and succulent. As a general rule the food in the winter and a portion of the spring months is plentiful; but as soon as the summer sets in with its hot winds the grass dries up in a few days, and the sheep are compelled to subsist for weeks and months on the remains of the parched up grasses. During the winter season, the Murray river overflows the adjoining flats, and after the river falls a gross and luxuriant vegetation springs up on the bottoms. Within a few days after the hot winds set in. This ephemeral vegetation withers and is trampled to dust by the sheep. I have been assured by several extensive and reliable squatters that when food becomes scarce, the sheep will visit these flats and lick up the fine vegetable matter." On page two hundred and twenty he says of Aquala, a station supporting thirty thousand sheep: "Arriving at seven P. M., we stopped at the hut of the overseer, from whom we got directions where to place our animals that they might forage for themselves. We led them across the creek to what the overseer described as a grassy flat. The description was true as to the flat, but as to the grass, all that can be said is that though it looked green by moonlight, yet when I went on my knees to test the reality of the vision, I was only able to find a blade here and there; yet this was the best pasture upon a station supporting thirty thousand sheep. It was the oasis specially kept for the benefit of travelers and favorite horses." In describing the Pintha station he says: "As a rule throughout this region the head station or residence of the proprietor is always by a creek or where there is water. If there is no water in the creek, *which is mostly the case*, a well is sunk in it and proves successful. This station carries seventy thousand sheep, the average weight of the fleece being five pounds. Expense of growing the wool, eight cents per pound; profit of the sheep run to the owner \$55,000 per year." Will your readers note in addition to the scanty dried vegetation that *these seventy thousand sheep were watered from wells, by hand?*

Of the sheep of Australia, he says: "These sheep are descended from an importation of pure bred Saxons. In size, length of staple, and weight of fleece, they excel the parent stock." For a moment consider this country with a dried, parched vegetation, with almost no running streams, and a hot climate, isolated from all other countries by thousands of miles, with no home demand for woollens, building up a wool product which makes the manufacturing centers of the world dependent upon them, *and which rivals in wealth the annual gold product of the whole world.* Compare this country with our trans-Missouri pastoral lands, which have ten times their vegetation,

abundance of living streams, clear, cool climate, railroads and a home demand at our very doors.

SOUTH AMERICA.

Of the management and profits of wool and stock growing in South America, I extract the following from an article written by the Rev. G. D. Carrow: "The ordinary conditions of agreement between proprietors and shepherds are few and simple. If the shepherd's compensation for his services is to be an interest in the flock, the customary stipulations are that he shall bear the expenses of superintending and shearing; shall take from his charge meat enough for himself and family, and shall receive one-third of the yearly increase of lambs and growth of wool. On the other hand, the proprietor is obliged to furnish pasture for the flock, a pen to fold it in, and a house for the shepherd and his family. The contract between the parties is generally made for three years. *At the end of that time, if the shepherd has conducted himself well and taken care of his share of the annual profits, he is able to purchase the half of a flock.* The wool is divided annually, and the flock at the end of the contract. *In this way a laboring man soon becomes an independent proprietor.* The shepherd emigrants of the pampas are to a large extent English. They become great proprietors, set up an establishment, deck their servants in livery, keep a carriage for Mrs. Bull and the children, and for Mr. Bull a fine saddle-horse. He lounges at the club over a bottle of stout port and a copy of the *Times*." Of the Scotch emigrants he says: "Mr. Sandy McNaughton turns shepherd on the pampas, with nothing but his hands and his wits to direct them. In thirty years he owns farms and flocks and other investments, amounting to half a million."

RUSSIA.

From the report of the special commissioners of the United States to the Paris exposition of 1866, it appears that on the table lands and plains of the Caucassian mountain ranges, Russia possesses pastoral wealth second not even to Australia and the La Plata. "In that region, Mr. Tillibert has a flock of seventy thousand Merinos. In 1864 it numbered fifty thousand head, and sheared 476,496 pounds of wool. M. Beonstine, of Odessa, reports a flock consisting of 400,000 sheep. The last shearing produced 1,111,599 pounds of scoured wool, or 2,223,154 pounds of unwashed wool, bringing the sheep owner \$558,000 in gold."

CALIFORNIA.

California is almost the only State that under the present low prices of wool, has maintained her number of sheep. The rates that were so ruinously low in all the States east of the Missouri and Mis-

Mississippi rivers, were still lower in California, but owing to her winter grazing, sheep and wool growing was remunerative at even such low rates. From 1868 to 1869 California increased the numbers of her 1,550,000. Her wools have been improved by better breeds of sheep and by the climate and grasses, till they are now much sought for as clothing wools.

In 1852 and '53, Colonel Hollister drove twelve hundred sheep from the States to California, arriving there with eight hundred head. From that flock, with their increase in numbers and yield of wool, he now has ninety thousand sheep and an annual income from them of \$100,000. There are two men in Santa Barbara who own 200,000 sheep which yield them 1,200,000 pounds of wool, selling for \$240,000 in gold. On an island near the coast, below San Francisco, one man grazes fifty thousand sheep. The Jewetts, two young men from Vermont, with small capital, have, within the last twelve years, raised ninety thousand sheep.

Of the experience of wool and sheep growing in our trans-Missouri country the following letters are conclusive. Colonel Chaves, who writes the following letter, is the able and active delegate from New Mexico in Congress:

MR. CHAVES' LETTER.

HOUSE OF REPRESENTATIVES,
WASHINGTON, D. C., December 20, 1870. }

DR. H. LATHAM, LARAMIE CITY, W. T.:

Dear Sir:—Your favor of the 19th instant, asking information in reference to sheep raising and all other matters pertaining thereto, has been duly received, and I take great pleasure in giving you the results of the experience of sheep raising in the territory of New Mexico which I have the honor to represent.

Without having the data before me, and only judging from what I know of the territory and of the large sheep owners in it, I am satisfied that I do not overestimate the number, in stating them at one million five hundred thousand head of ewes. The climate is extremely temperate and salubrious, no diseases, much less those affecting the skin or hoofs, being known. Sheep in our territory are herded and grazed from one portion of the territory to another during the same year, thus adopting what may be termed the migratory plan. The climate is dry and the soil is gravelly, producing the most nutritious of grasses and shrubs. Of the former, the gramma and bunch grass, of which there are two or three different varieties, and of the latter, the various kinds of sage, which make the best and most nutritious of browsing, and a large amount of underbrush and seed grass in the mountains. Were it not for the insecurity of life and property, caused by the wild marauding tribes of Indians, especially the Navajoes, but a few years would elapse before New Mexico's hills and plains would be literally covered with fleecy flocks. It is but a few years back and actually within my own personal recollection, when nearly one million of sheep were annually

driven to market to Southern Mexico from our territory. At that time sheep were worth but twenty-five cents a head, and all those engaged in the business made money. That prosperity in the history of New Mexico was superinduced by twelve years of unintermitted peace with the Navajoes.

A sheep raiser in New Mexico can safely calculate on an increase of eighty per centum at the least. A sheep raiser in New Mexico, notwithstanding the coarse quality of the wool of the present stock, can herd his sheep and make a profit from the product of his wool and have all the increase of his stock in addition thereto.

I have no hesitation in saying, that New Mexico can fairly compete with Australia, South Africa and South America, in production of cheap wool.

These statements may appear to you somewhat exaggerated, but I assure you, on the contrary, that it is within the limits of reasonable bounds. I was born and raised in New Mexico, my friends and relations have always owned sheep, and I, myself, have, to a large extent, been an owner of that kind of property, and therefore, to a great extent, speak from personal experience.

Hoping this will be of service to you in calling attention to the great grazing fields in our western country,

I am, Sir, very respectfully yours,

I, FRANCISCO CHAVES, M. C.,
New Mexico.

LETTER FROM HON. J. B. CHAFFEE, OF COLORADO.

WASHINGTON, D. C., December 19th, 1870.

DR. H. LATHAM :

My Dear Sir :—I regret to say that I am not sufficiently posted in regard to the sheep husbandry of Colorado to enable me to give you facts and figures more definitely.

The number of persons engaged in stock raising is increasing so rapidly that the statement of its being a very remunerative business would seem to need no other demonstration.

In one county (Conejoes), out of the twenty-one counties of Colorado, over 300,000 sheep were grazing at one time last summer, and I do not think 1,500,000 would be an over estimate for the whole territory. The character of the climate and soil being dry—the latter being also gravelly and porous, the grasses are very nutritious, with a great variety of food in the great variety of the aromatic plants of that country, renders them scarcely liable to disease. It is undoubtedly the most natural and finely adapted sheep growing country in the world, and I think this is the universal testimony of those best acquainted with stock raising, who have visited Colorado in the last few years. In the southern portion of Colorado the only cost is herding, and subsisting upon the natural grasses of the country, in the winter as well as summer; no preparation of hay or other food is necessary. The net profit is reckoned, after deducting every expense, at not less than forty, and by

LETTERS FROM MESSRS. CHAFFEE AND HOOPER. 79

others at seventy-five per cent. per annum upon the investment, and this is at the present low prices, and for our inferior grades of wool.

Woolen manufactories are springing up in that country, which will increase the price of wool by creating a better market, and at no distant day will that country be the most extensive woolen manufacturing country of this continent.

The eastern slope of the Rocky Mountains, including Wyoming, Colorado and New Mexico, is doubtless the best sheep growing region on this continent, and, likely, of the whole world; and is capable of grazing more sheep, and cheaper, than all the rest of the United States together.

Very truly, yours,

J. B. CHAFFEE.

LETTER FROM HON. WILLIAM H. HOOPER, DELEGATE IN
CONGRESS FROM UTAH.

HOUSE OF REPRESENTATIVES, }
WASHINGTON, D. C., January 26, 1871. }

MY DEAR SIR :

In compliance with your request, I herewith give you a few items, which I think will interest you in relation to sheep growing in my territory :

The climate, grasses, and topography of that country renders it one of the best sheep producing localities in the whole range of States and territories. And I claim that in this respect what I say for Utah will almost wholly apply to the entire Rocky Mountain country. The sheep are healthy and prolific, and afford the finest mutton I have ever eaten; and their fleeces are in quantity and quality all that could be desired.

The people of my territory have from necessity given to the subject of sheep growing as full and careful a test, if not more so, than any other, settling the higher regions of the Far West. Their destitute condition, on arriving at Salt Lake, compelled them to give early and thorough attention to home productions, as their fine flocks of sheep and their numerous woolen and cotton factories, which followed their settlement of that country, will attest. I think there are now running in Utah five (5) woolen factories, which are far behind in working up the wool produced. Other factories are now being built—one of them designed for three thousand spindles—which will manufacture different and finer cloths than any now made in our territory. I am entirely satisfied that we shall be able not only to clothe our present population with these home products, making these investments at the same time profitable and self-sustaining, but be able to provide for the large influx that yearly is adding to our numbers. And we are pleased to know that with these additions are many skilled workmen in the woolens, as well as other branches of mechanism.

One very advantageous feature of the Rocky Mountain range in sheep growing is the adaptability of our many valleys for the raising of roots, which afford them good food, and enables their owners—those in

the higher and more northern and more snowy portions—to feed them well, and thus render more certain a large number of lambs, and a larger yield of wool.

So much for our sheep. Let me tell you, also, that Utah has cotton factories, and grows the upland cotton to run them; and though it may not, in the cent per cent view, be a big paying interest, still it helps to render the people to a great degree independent.

Madder and indigo are produced in Southern Utah—enough for domestic use. Let me also say that our vineyards, so productive, will soon enable us to furnish wine for export. The other fruits, you know, are thrifty and prolific, and no finer flavored fruit is grown anywhere.

Silk-growing, too, is soon to be one of our great interests, experiments in that direction having proved very successful. Indeed, I may safely say that, next to wool growing, silk growing will soon take the place for utility and profit. The mulberry tree grows luxuriantly under the care of the husbandman, and as a shade tree it is incomparable for beauty. We are doing much to prepare the way to add this industry, of so much interest to the whole world, to the numerous and growing interests to which Utah can to-day point with so much pride.

Very respectfully yours,

W. H. HOOPER.

DR. H. LATHAM, Laramie, W. T.

LETTER FROM HON. S. F. NUCKOLLS,

our present delegate in Congress. As an intelligent and practical observer he has no superior in this country:

FORTY-FIRST CONGRESS U. S.,
HOUSE OF REPRESENTATIVES,
WASHINGTON, D. C., January 10th, 1871. }

H. LATHAM, M. D.:

Dear Sir:—In reply to your request for my opinion of the character and capacity of Wyoming Territory for pastoral purposes, I would say, briefly, that the soil, grasses and climate render it eminently superior, especially for sheep. The soil absorbs the falling rain rapidly, while its lighter particles refuse to attach permanently to the fleece, affording a clip as clean without washing, as in other countries with washing. The grasses are highly nutritious, cure on the ground, remain as permanent food during the entire winter, and have better fattening properties than the prairie grasses in the more eastern and northern States.

The position is elevated, the air pure, and the ground seldom muddy or soft. In addition to all this there are no burrs of any kind which are such pests in other regions. Sheep are therefore healthy and free from foot rot and other distempers common to low, moist lands and rank, coarse food. They have been kept for the past twelve years about the military posts without trouble, and last winter some thirty thousand went through without shelter or food, other than the grass on the

ground. The flock of James A. Moore & Bro., near Cheyenne, composed of common Merino, and small Mexican sheep, averaged five pounds to the fleece.

Cattle, in large quantities, are kept in the same way, and the cattle, worked poor in freighting, turned out in the fall, are fat and ready for the yoke or the butcher when spring comes. The quantity of lands adapted to this business along the eastern slope, in the valleys and mountains, is simply immense, amounting to millions of acres. The facilities for sale and shipment are all that can be asked or needed. I have no hesitation in saying that these lands are destined to supply the wool and mutton for a large part of the country, and preserve this industry now being driven out of the eastern and northern States by the cost of winter feed, and the greater value of lands for other purposes. I may also add that the snow never falls to any great depth on the grazing lands, and is taken up by the atmosphere, often leaving scarcely a trace of dampness on the ground.

Respectfully,

S. F. NUCKOLLS,

Delegate from Wyoming Territory.

LETTER FROM SENATOR THAYER,

SENATE CHAMBER, WASHINGTON, D. C., }
December 27th, 1870. }

DR. H. LATHAM, Laramie, W. T. :

Dear Sir.—Your favor relating to the future of the Rocky mountain country is at hand. It gives me pleasure now, as it always has done, to give my testimony to the great wealth which is to be developed there.

In some respects I look upon grazing as the most important of the varied resources of that region. It is the most important, as the great want of our population is a plentiful supply of cheap animal food.

It is also important as the *only* means of furnishing cheap wool from which to manufacture low-priced clothing for our laboring classes, and for exportation.

The interior of all continents, with their high, dry and comparatively arid table-lands, has furnished winter grazing, by which means low-priced wool has been grown. It is so with Asia, Africa, South America and Australia. It will be pre-eminently so with all that country west of the Missouri river. The experience of the freighters on the plains and in the mountains for a quarter of a century, leaves no doubt of the certainty of winter grazing for horses, sheep and cattle in that greater half of our country.

I am sure that wool can be grown there equal in fibre to the best wools of Australia, Saxony, Silesia or Moravia, and at as low prices as any wool can be grown on the cheapest pastures of the world, and still leave a wide margin to the flock-masters for profit. We ought to grow all the wool there not only for our own wants, but for the use of the non-wool-growing world. When we grow the necessary fibres I have no doubt we shall then be able to produce cheap and fine fibres at

prices that will enable us to compete in the markets of the world with those of any country. The overshadowing importance of this subject should attract the attention of every economist in the country.

Very truly yours,

JNO. M. THAYER.

LETTER FROM HON. WM. D. KELLEY.

HOUSE OF REPRESENTATIVES,
COMMITTEE OF WAYS AND MEANS,
WASHINGTON, D. C., December 18, 1870. }

DR. H. LATHAM, Laramie, W. T. :

Dear Sir :—I must admit that I thought some of the statements you made last summer, when I met you at Laramie, and you were kind enough to accompany us eastward, were exaggerated, but subsequent observation and study have satisfied me that you did not fully indicate the capacity of the country for varied production and the sustenance of a numerous and prosperous population.

Two industries, each of primary importance to the country, should be introduced at an early day, because both will find there the conditions under which they may be brought almost immediately to absolute perfection. I mean the growth of wool, both from the Angora and Cashmere goats and the sheep, and the production of the best beet-root sugar.

For the latter, Grant, in his admirable little book, says the primary essentials are cheap land and fuel and pure water. All these you have wherever the melting snow of the mountains can be carried for irrigation, and in the neighborhood of all your mountain streams.

Your natural grasses and aromatic herbage are identical with those of the great sheep fields of Asia and Australia, and should you establish the production of the beet and the manufacture of sugar on a large scale, you will find, as it has been found everywhere else, that three tons of the refuse beet, from which the saccharine matter has been expressed, will be equivalent to two tons of the best hay in sustaining and fattening sheep and cattle.

It therefore seems to me that you will render a very important service, not only to your own section, but to the country at large, if, by making known these peculiar resources, you promote the establishment of two such vital industries. Either of them will doubtless succeed if undertaken by proper hands; but both should be established, as each will contribute to the success of the other.

Again thanking you for the important information you have given me, and wishing you abundant success in your efforts to promote the development of this extended and interesting portion of our country, I remain yours very truly,

WM. D. KELLEY.

LETTER FROM SENATOR CONKLING.

83

EXTRACT FROM A LETTER OF HON. ROSCOE CONKLING.

UNITED STATES SENATE CHAMBER,
WASHINGTON, December, 19, 1870. }

DR. H. LATHAM :

My Dear Sir :— * * * * I comply willingly with your request to state briefly the result of my observation of your far western lands, in respect to their capabilities for sheep growing.

On all occasions of traversing the plains—and I have crossed them several times—my attention has been attracted to the adaptation of the country to flocks. Indeed, the most broken, abrupt and waste places seemed to me available for sheep grazing. The dryness and softness of the ground is one of the elements in the case to be noticed ; but I am writing too hastily to do more than bear testimony to the conclusion to which I came. * * *

Your obedient servant,

ROSCOE CONKLING.

EXTRACT FROM A LETTER FROM HON. G. S. ORTH.

WASHINGTON, D. C., December 21, 1870.

DR. H. LATHAM :

*Dear Sir :—*My brief visit to the plains, a year since, fully confirmed my opinion as to the peculiar adaptability of the plains to sheep husbandry. The vast extent of country, with its variety of soil and climate, imposes upon our people the necessity for diversified pursuits and occupations ; and while we have the means of producing all the wool and woolens needed for clothing our people, we should not be dependent upon foreign nations for so important an element in our national prosperity.

Yours truly,

GOODLOVE S. ORTH.

LETTER FROM HON. WM. LAWRENCE.

HOUSE OF REPRESENTATIVES, }
WASHINGTON, D. C., December 19, 1870. }

H. LATHAM, M. D., Laramie, W. T. :

*Dear Sir :—*I have been, and am somewhat interested in raising sheep and producing wool in Ohio, and I have given some attention to the subject. On the 8th of April last I expressed my opinion of the future of sheep husbandry, in this country, in a speech which I made in Congress, and which I yet believe to be correct. I then expressed the opinion that the interior of this country would, in a few years, produce nearly all the wool that would be required in the United States for our home supply ; and in fact I do not entertain any doubt but that in twenty years enough wool can be raised to supply not only the home demand, but enough for all the export trade this country can command. In August, 1869, I passed over the railroad from Omaha to San Francisco. I stopped at Laramie, in Wyoming territory. There I saw

a herd of four thousand cattle and some three thousand sheep, grazing in Laramie valley, in healthy condition and good order. Laramie valley is about one hundred miles long, and thirty miles wide, as I there learned, covered mainly with a short, but very nutritious grass, well adapted to grazing cattle and sheep. The climate, as I learned, was generally cool, with a healthful, bracing atmosphere, with nothing to produce disease either in men or stock. I mention this valley because I examined it more carefully than any other; but from what I saw and learned I am satisfied a large part of the great central interior of this continent is of the same description of land. I can not doubt that this, in a few years, will become the principal stock-raising portion of our country. Sheep can be raised at no expense except herding, and in some places the cost of cutting enough grass along the streams for hay, to feed a short time in the winter, while in much of this vast region, as I learn, sheep can be kept the year round in good order, without hay or grain, simply by grazing. I cannot doubt but in a few years wool will be produced so cheap, and in such quantities, that it cannot be imported from abroad. When our home supply of wool shall thus be increased, and rendered as cheap, or cheaper, than wool can be imported, I cannot see why this will not become the greatest manufacturing country in the world. With the cheapest wool in the world, and a vast supply of cheap agricultural products, woolen manufactories must spring up in great abundance, and the United States will become exporters instead of importers of woolen goods. One result of this will be that a new and vastly increased market will be created for the agricultural products of the grain growing States. The soil and climate is not adapted to grain growing, unless by irrigation, west of the central portion of Kansas and Nebraska, hence the production of wool in the trans-Missouri country will create a demand for agricultural products there, and manufactories will multiply to still increase the demand.

Already the prospect of sheep growing in this interior region is having its effects. In two years the sheep of Ohio have diminished 2,579,410 in numbers, in part, doubtless, owing to the considerations I have named. It is in my judgment only a question of time, and that a few years at most, when sheep growing for wool will be transferred to this great central region. These are the opinions I entertain and if they can be of any service in assisting you to attract the attention of our eastern people to this undeveloped resource of that greater half of our country, I shall proudly feel that I have contributed a very little to aid in developing a vast region of country and in opening it up as a source of untold wealth.

With the vast product of wool that is soon to come from this great interior region, I believe too, there will soon spring up in various portions of the United States the grandest and most extensive manufacturing enterprises the world has ever seen. All questions of free trade will be settled in a few years by these interior sources of wealth.

Very truly yours,

WM. LAWRENCE.

In an able, exhaustive article on "Sheep on the Prairies," the Hon. J. B. Grinnell, of Iowa, in speaking of the necessity of a varied agriculture, says:

The States of Missouri, Iowa, Kansas, Illinois, Minnesota, Wisconsin and Michigan have expended more than \$200,000,000 in the construction of railroads. They have brought life to a thousand cities and villages on the "iron ways," and wealth to such farmers as have found a near market and an easy transportation of their grain to the older States. But the demand for grain is west; the warehouses are full, and in the north-west wheat is a drug, and the future is not full of promise to the grain raiser. Our lands are fast being exhausted, and for a wheat market we must depend upon a scarcity in the old world, and even then the profits must be determined by the carriers and toll-gatherers of sea and land, who fix their rates of transportation as high as possible, and not amount to a prohibition of the products ready for market.

* * * Wool is no exotic. Earnestness and skill are the first requisites, and a production of wool equal to the wants of all the dwellers on the continent, will be at hand, bringing into use millions of acres of the finest native sheep-walks, now producing grass, that is just suited to the flock. Disturbed labor, and an inadequate production point to a virgin empire in extent, and invite the world to a way of wealth, which secured, diversifies our productions, gives scope to national enterprise, subsistence and hope to those who would find a homestead on the free lands of the west. At any point two hundred miles from Chicago this ratio of freight is well established: That to transport your products to the seaboard, on wheat you pay eighty per cent. of its value; on pork, thirty per cent.; on beef twenty per cent.; on wool four per cent. This is no conjecture, but my own experience, that I give eighty per cent. of the value of wheat, *which impoverishes my farm*, to find a market for it, and four per cent. to find the best wool market, the production of *which enriches my acres beyond calculation*. National development and expansion are involved in the early clothing of our prairies with bleating flocks. We have room and occupation for hundreds of thousands who should go forth from our teeming cities to escape crowded garrets and the death-damp of cellars. To the young man who believes "the behavior of sheep as fascinating under any circumstances," and finds no room on the "old farm" in the east, we can say: Here is room—an unclaimed area larger by thousands of square miles than the land of Midian, from which the Israelites brought forth 750,000 sheep as spoils—a range of country from southern Kansas on the south, to St. Paul on the north, as varied in climate and production, and better adapted to the wants of the shepherd than the famed walks of Spain—varying as the southern plains of Andalusia and the northern snow-clad mountains, on and between which extremes there were depastured with profit several millions of sheep, the progenitors of our famed Merinos.

Our national sheep-walks, as yet untrod by the "golden hoof," embrace an area of country larger than the pastures of ancient Assyria, and the famed pastures of Europe; and had we a population one-half

as dense as the sheep districts of France and Spain, without lessening the other staple products sent to market, we could clothe our own people and produce a sufficiency of wool at forty cents per pound to pay interest and principal on our debt of two thousand million dollars, within the time which has been required to earn the well-deserved name of our American Merinos.

In writing the above Mr. Grinnell had in mind only the immediate Mississippi and Missouri valleys. He did not have the faintest conception that adjoining the region which he describes there were perennial pastures so boundless that the land of Midian with the captured flock of 750,000 could be put in any of the hundreds of mountain valleys, where there are no Iowa rains, nor Iowa sleets, nor six months of winter, with expensive feeding. What he so well and truthfully says of the prairies will apply to the plains and mountains with infinitely more force and propriety. This winter of 1870 and 1871 has added another to the long list which have been experienced, in which sheep flourish on the cured grasses alone. Here in this valley Hutton & Alsop's loss has been much less than the usual losses in the States, where there is shelter and continual feeding. In one flock in sight of town which I have been watching, there are three thousand two hundred sheep. One man tends them. They have not eaten a pound of hay nor have they required it. This is their first winter in this high altitude. They are fat, and wethers are being killed from this flock daily, for months. The loss from this flock so far is five head, one of the five was drowned and one caught in the fence and injured. Of J. A. Moore & Bro.'s flocks at Sidney, consisting of more than ten thousand head of all ages, to the 1st day of February, only three had died. So the brothers inform me.

COST OF KEEPING ON THE PLAINS.

In the Agricultural Report of 1862, before the inflation of prices, from a thousand communications from all the Northern States, it was estimated that the average cost of keeping sheep per head was two dollars and sixty-five cents. The comparative cost of keeping sheep in the States and on the plains would be as follows:

3,000 sheep in States at \$2.65 per head	\$ 7950
3,000 sheep on the plains, one herder at \$50 per month including board.....	600
150 tons of hay to be used in case of uncommonly severe storms, at \$4 per ton	600
Total.....	\$1200

Difference in favor of the plains.....	\$6750
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In ordinary winters the six hundred dollars worth of hay would not be needed.

The great bulk of our grazing is probably better adapted to merino sheep than any others, as they love the high rolling plains and foothills, and the short, sweet grass or plants found there, and there they seem to realize the highest possibilities of the sheep. I quote the following from the report on wools, etc., by Messrs. Mudge and Hays, last Commissioners to Paris in 1866: "Conspicuous among the wools displayed at the Exposition were those of the Merino race distinguished for the softness and length of fiber. Those from France and Australia were the most noticeable, the wools of this kind from Australia having been derived from French stock. The length of fibre, enabling these wools to be combed, adapts them for the beautiful dress goods for female wear, such as *thibets*, *cashmere* and *merinos*, which are the most characteristic fabrics of the present century. The wool of this character produced in France surpassed that of any other country, and its possession has caused France to take the lead in this manufacture, which was not attempted in England until the wools of Australia were seen to develop similar qualities."

Mr. Brownville, in his essay upon the combing wools of France, remarks: "There are two facts we ought to proclaim abroad. The first is, that without the introduction of the Spanish race into our flocks and without the skill of our agriculturists, we should still luxuriate in dependence upon neighboring nations, and should be reduced to clothe ourselves with their stuffs. It is to the admirable revolution in the raising of ovine animals that we owe the beautiful industry of spinning the Merino combing wools. It is to this that we owe the splendor of the industries of weaving combing wool at Paris, at Rheims, at Roubaix, at Amiens, and St. Quentin."

"The second is, that the aspect, the quality, the character of our modern tissues—in a word, all that makes them deserve, for forty or fifty years, the name of new inventions—are due principally to the particular nature of the combing wool obtained by the Spanish cross."

It is on these plains and mountain sides that this same wool can and will be grown to build up industries that will rival those of France. Colorado alone, has 50,000,000 acres of pasturage, available either in the summer or winter, where all the sheep in Australia could graze on better herbage, in a better climate, and with infinitely a better supply of pure water, than they have found where this combing fibre has been developed, which has done so much to build up the "splendor of the industries at Paris, at Rheims, at Roubaix, at Amiens and St. Quentin." Would it be a great stretch of the imagination to see the plains, foot-hills, and mountain-sides at the sources of the Arkansas, the Platte, and their hundred tributaries, covered with fleecy flocks, yielding combing wool, and Denver, Pueblo and Greeley the centers of industries, rivaling the splendor

of the French industries? Cheyenne has millions of acres of grazing north of the Union Pacific railroad, capable of growing enough wool to run three such establishments as the Mission mills, in California, and which employ seven hundred and fifty operators.

The Laramie valley would graze a million sheep, yielding 5,000,000 pounds of wool, giving employment to hundreds of workmen and workwomen in the process of cleansing, picking, carding, spinning, weaving, coloring and the processes of finishing which are involved in the manufacture of the wool into cloth.

In 1890, when our population numbers 65,000,000, when the Mississippi valley, instead of having 18,000,000, as it had in 1870, shall have more than 40,000,000 people, when Mexico, Central America, the West Indies and South America, with our own population, shall aggregate more than 100,000,000 people, consuming American goods, drawing the wool from our vast perennial pastures for a trade greater than the present day has seen, is it unreasonable to anticipate that Omaha, St. Joseph, Leavenworth and Kansas City shall equal in wealth the cities of the La Plata and Australia, several of which have 100,000 people, and some of which have 300,000 population and a trade and commerce unrivaled in the world's history for profit? Which cities of the great valley shall be the metropolis for this great trade? As with individuals, so with cities, "character is destiny." The city which fosters and builds up this enterprise, that plants the shepherd colonies, and that brings capital to its aid, will so surely reap this golden harvest.

While we are prospecting every mountain side, every valley, every canon and ravine in the Rocky Mountain ranges for gold and silver, while thousands in Colorado, Utah, New Mexico, Montana and Nevada are pointing to the "golden or silvery way to wealth," let your readers remember that while the annual product from all the gold mines in the world for 1870 was only \$60,000,000, and all the gold and silver mines combined was only \$100,000,000; that Australia alone furnished more than \$150,000,000 worth of wool, which the manufacturer, in turn, by his skill and labor, made worth three times as much, whereby nearly \$500,000,000 in value were added to the commerce of the world. I do not say any thing in disparagement of their "way to wealth," but I do say that this is "the way that leads to wealth," which secured, diversifies our productions, gives scope to national enterprise, subsistence and hope to those who would find a homestead on the free lands of the west, builds up manufactories, retains and multiplies capital in the country, fosters an infinite variety of other industries, adds to the health of our people, increases the fertility of our soils, levies tribute upon other countries to buy our fibres and fabrics, and will make our trade and commerce as ubiquitous as the waters of the seas themselves.

